



EMPLOYEES' MAGAZINE

The Union Pacific Coal Company

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OCTOBER, 1935

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EMPLOYES' MAGAZINE

THE UNION PACIFIC COAL COMPANY

VOLUME 12

OCTOBER, 1935

NUMBER 10

The Earth in Time and Space

By IRVING A. PALMER
Professor of Metallurgy, Colorado School
of Mines.

A FEW years ago a prominent clergyman remarked that the astronomers had reduced the earth to the comparative size and importance of "a pathetic cinder, drifting aimlessly through space". The scientists to whom he referred in particular included A. S. Eddington and Sir James Jeans, in England, and Doctors George Ellery Hale, Edwin P. Hubble and Harlow Shapley, in the United States.

The churchman's complaint against the astronomers was not entirely fair. It is quite true that all of the scientific gentlemen mentioned agree that in size the earth is only an insignificant speck in the material universe. But as to its relative importance, as to whether or not there is any particular meaning, either in the earth itself, or in the life that exists upon it, most scientists are discreetly silent. At the present time, there is no way of proving the case, either for or against; any prolonged discussion of it, therefore, is a waste of energy. One is reminded of the church fathers who debated, often very acrimoniously, the question as to the number of angels who could seat themselves comfortably upon the point of a pin.

What is the Earth? It is an approximately spherical body, of an average diameter of 7,918 miles, slightly flattened at the poles, rotating on its axis in the average time of 24 hours, and revolving around a body called the sun once in about 365½ days. The orbit which the earth describes in its journey around the sun is not a perfect circle but is slightly elliptical, so that the distance between the two bodies varies from time to time. The average distance is about 92,900,000 miles. The motion of the earth around the sun is the resultant chiefly of two forces—a forward motion imparted to the earth at the time it was formed, and the attractive force of the sun. If the forward motion could be stopped in some way the earth would promptly fall into the sun. If the sun were to be suddenly destroyed by some super catastrophe, the earth would fly off through space, approx-

imately in a straight line, until it came under the influence of some other body. The two forces that control the earth's motion around the sun are so delicately balanced that it is estimated that the time of one revolution has not changed more than one second in a half million years. A moment's consideration will show that this must be true; for, if at some period in the remote past, the two forces should have become unbalanced the earth either would have been gradually drawn into the sun, or it would have wandered off into space.

There is revolving around the earth at an average distance of 238,900 miles a body which we call the moon, and which is 2,160 miles in diameter, weighs about 1.25 per cent as much as the earth, and makes a complete revolution once in 27.3 days. It always presents the same face to the earth, so that it rotates on its axis once in the 27.3 day period. There is no air or water on the moon; there are many high mountains—up to 20,000 feet in elevation—many crater-like depressions that seem to be the results of volcanic action, and the whole surface seems to be covered by volcanic ash. At night the surface temperature falls to 150 degrees below zero, while at the lunar noon it rises to 250 degrees above zero. These figures were obtained by Pettit and Nicholson in 1930 by means of an instrument that may be called a long distance thermometer.

There is no indication of any life whatsoever on the surface of the moon, as one could surmise from the unfavorable conditions. The absence of water and atmosphere is due to the low surface gravity of the moon, which is only about one-sixth of that of the earth. If the earth's attraction of gravitation were to be cut down to one-sixth of what it is now, all of the air would promptly fly away, and, as it vaporized, the water would do the same. All life, therefore, would be suffocated and desiccated.

The sun is an immense spherical body, 864,000 miles in diameter, or more than 100 times that of the earth, and having a tremendously high tempera-

The Employes' Magazine is distributed to employes free of cost. Subscription to other than employes \$1.50 per year. Articles of interest to our readers, photographs and sketches suitable for reproduction, are solicited and should be addressed to Editor, Employes' Magazine, Union Pacific Coal Company, Rock Springs, Wyoming.

ture. The surface temperature is about $11,000^{\circ}$ F, while that at the center has been estimated as high as $80,000,000^{\circ}$ F. The sun also rotates on its axis, but the exact time of rotation is difficult to determine, because of the fact that the outer layers of the body for an unknown depth are gaseous, and the speed of rotation varies with the latitude. At the equator the time of one revolution is about 25 days.

For a long time astronomers were unable to understand how it was possible for the sun to continue radiating such tremendous quantities of energy without becoming appreciably cooler. At first it was believed that the gradual contraction of the sun would keep up the supply of heat and light. As bodies contract they become hotter and radiate more energy, but a point is soon reached when the increased temperature is exactly balanced by the radiation and the temperature becomes constant.

Calculation showed, however, that the contraction process could not go on indefinitely, for the reason that eventually the sun would become so dense that it could no longer contract. The time limit was set at 35,000,000 years. That seems a rather long period, but it isn't long enough. It is generally believed that some form of life has existed upon the earth for at least 500,000,000 years, and that the earth itself has been in existence for a much longer time. The sun, therefore, must have been in business for a very much longer period than 35,000,000 years.

The present theory to account for the source of the sun's energy, first proposed by Einstein in 1905, is that it is due to the conversion of matter into energy. If this theory is true—and most scientists now believe that it is true—the sun is losing weight at the rate of 4,200,000 tons every second as a consequence of its radiation. There is no need, however, for us to worry about freezing to death in the near future, for the sun is so tremendously large that this rate of radiation would mean a loss of weight of one per cent in about 150,000,000,000 years.

According to Einstein's formula, if one gram, or about one thirtieth of an ounce, of matter could be converted into heat energy, it would be sufficient to melt 14,000 tons of iron. Incidentally, most scientific men now believe that matter and all forms of energy, including what we call life and mind, very likely are made up of the same ultimate constituents. It is becoming increasingly probable that these entities are being converted into each other all the time.

But the earth and moon are not the only bodies revolving around the sun. There are eight other major planets known, beginning with Mercury, which is nearest the sun, and ending with Pluto, discovered only five years ago, and which is 3,680,000,000 miles distant from the sun. Pluto is so far away that it requires more than five hours for its faint light to reach us. Jupiter is so large that its volume is more than 1,300 times that of the

earth. Neptune, discovered in 1846, has completed only a little more than half of one revolution around the sun since that date, as it requires almost 165 years to make one round trip. Pluto goes around once in about 250 years.

Mars has two satellites or moons; Jupiter, ten; Saturn, nine; Uranus, four; and Neptune, one. Some of these are larger than the moon. Whether or not Pluto has a satellite is not known.

Are any of the planets other than the earth capable of sustaining life? We do not know. Venus seems to be more like the earth in many respects than any of the other planets. But the surface is so completely obscured by clouds that we cannot tell what the planet itself looks like. It also has an atmosphere, perhaps almost as dense as that of the earth.

Not so long ago Mars was considered as a possible abode of life. At present, however, it is believed that if there is any animal or vegetable life there it must exist under rather unfavorable conditions. There is very little water, very little air, and only 15 per cent as much oxygen in the air as in our own atmosphere. There are no seas nor oceans. There are no high mountains, and the surface seems to be mostly desert. In short, Mars is a planet that in all probability has seen its best days, in so far as living conditions are concerned. It may have been the abode of abundant life at some remote period in the past, but at present it can be little more than a gigantic, spherical cemetery, 4,216 miles in diameter, and swinging ceaselessly and silently in a tremendous orbit around the sun. If it is a dead world, and if somewhere in the universe there is a mighty historian who records the birth and growth and decay of planets, what would we not give for the story of Mars! It might even outrival in human interest the tale of Bruno Richard Hauptmann, or the love letters of Napoleon Bonaparte.

Mercury is too small and too hot to have any atmosphere or any water. It is so close to the sun that we do not know much about the surface conditions.

The other planets are all surrounded by immense layers of gases and vapors, so that we are unable to see the solid surface of any one of them.

Also there are more than 1,200 asteroids, or smaller bodies, revolving around the sun, mainly between the orbit of Mars and Jupiter, and having diameters ranging from five to 485 miles. There are indications of thousands of smaller ones. Many astronomers think that they are the remains of an ancient planet that became the victim of a major accident and was torn to pieces.

Then there are the comets and meteors. Hundreds of comets have been seen and described, and millions of meteors fall upon the earth every day. Most of the latter are so small that on coming into the earth's atmosphere they are dissipated into dust. In the arctic regions the snow is sometimes covered with the reddish oxide of iron coming from

burned up meteors. The explorer, Peary, brought a meteor from Greenland that weighs $36\frac{1}{2}$ tons; it is in the American Museum of Natural History, in New York City. The meteor that formed Meteor Crater, near Winslow, Arizona, must have weighed about 14,000,000 tons. Several tons of meteoric iron have been picked up within a radius of six miles from the crater.

All of these bodies seem to be moving around the sun and help to make up what we call the solar system. If the orbit of Pluto be considered as defining the outer boundary of this system, then the diameter of this tremendous spherical portion of space is more than seven billion miles, and light, traveling at the rate of 186,300 miles a second, would require eleven hours to cross from one side to the other.

The solar system, of which the sun is the center and dominating influence, is, therefore, the neck of woods in which we live. And it seems so tremendously large. A resident of Pluto, attempting to wigwag by means of a light signal across to someone on the opposite side of the system, would have to wait twenty-two hours for an acknowledgment of his message.

But there are other suns. We call them stars, a term which we inherited from our ancestors, who thought the stars to be insignificant as compared with the sun and earth. As a matter of fact, our forefathers believed the earth to be the center of the universe and the most important object in it. All of the other bodies, in their opinion, were created for the use of man, the sun to light his path by day and the moon and stars by night. A very pretty theory, and one which, no doubt, has given the human race a great deal of satisfaction.

The nearest star, so far as known, is Proxima Centauri, so-called because it is quite close to the solar system and because it is in the constellation of the Centaur. Light, which travels almost 6,000,000,000,000 miles in one year, requires four and a quarter years to pass from Proxima to the earth. It has already been stated that light would cross the entire solar system in eleven hours. In the interstellar spaces the distances are so great that astronomers use the unit light year, which means the distance traveled by light in one year.

Until recently, Alpha Centauri, another star in the same constellation, was thought to be our nearest astral neighbor, but Proxima is a bit closer. The distances in light years are 4.31 and 4.27, respectively. Both of these bodies are suns like our own, except that Alpha is larger and brighter than our sun, and Proxima is much smaller and also much less brilliant. Whether they have planetary bodies revolving around them we do not know; they are too far away for us to find out.

Sirius, the dog star, and the brightest one in the whole heavens, is $8\frac{1}{3}$ light years distant from us, is larger than the sun and gives out 26 times as much light. Other neighboring stars, of which there are about two dozen, have distances ranging up to

13 light years. All of these are suns, differing from our own in size, brilliance and age.

The unaided eye can see a total of about 4,700 stars in both hemispheres. In the quadrangle bounded by the four stars forming the cup of the Big Dipper, about a dozen others can be seen on very clear nights. With the largest telescope now in use, 150,000 stars are clearly visible in the same area. These figures give a faint idea of the total within the ken of the astronomer.

Everyone is familiar with the Milky Way, or Galaxy, the broad hazy band of light that stretches across the sky. It extends completely around the celestial sphere. The telescope shows it to consist of myriads of stars. The Galaxy as a whole has the approximate shape of a flat disc or grindstone, and is revolving about the center. All the stars that we can see with the naked eye and with low-powered telescopes are a part of this system. When we look directly at the Milky Way we are looking through the long diameter toward the center, and naturally see many more stars than when we look to one side or the other. In the latter case, the line of vision is toward the flattened sides. As the solar system is within the Galaxy, we can see stars in every direction. The sun, as one of the units, is moving around the galactic hub at the rate of 175 miles a second, but it is believed that 225 million years would be required for one revolution. The diameter of the Milky Way is estimated to be as much as 200,000 light years, and the thickness through the disc from 10,000 to 15,000 light years.

In the Galaxy there are known to be about one hundred star clusters, such as the Lesser Magellanic Cloud, which contains at least 500,000 stars brighter than Sirius, and which is so distant that its light takes 95,000 years to reach us. The nearest of these clusters is 18,400 light years distant and the farthest, 185,000 light years. The total number of stars in the entire galactic system is now estimated as at least 165,000 million. Some of these are vastly larger and brighter than the sun; others are smaller or less brilliant. On the whole, it is believed that the sun is about an average specimen of the stars in the Milky Way. Betelgeuse, the giant red star in the constellation Orion, is 27,000,000 times as large as the sun. Antares, the largest known star, has a volume 90,000,000 times that of the sun.

The sun is not at the hub or center of the Galaxy, but is about 30,000 or 40,000 light years to one side. We do not know, of course, whether or not there is any advantage of position in the case of the stars. It might tickle our vanity a bit if the astronomers were to tell us that all of our real estate is strictly down town property, but even that consolation has been taken away from us. We seem to be located in the suburbs—possibly down along the railroad tracks.

The matter and energy in the whole solar system bears a ratio to that of the Milky Way of less than 1 to 165,000 million; and the mass of the earth is $1/335,000$ of that of the solar system. In

other words, we are as a single grain of fine sand in a whole train load. Perhaps it doesn't matter so much just where we are located.

But this is only the beginning. Away out in space, 850,000 light years from the Milky Way, there is the nebula known as M 33. It is believed to be another system of stars similar to our own Galaxy but probably somewhat smaller. At any rate, it seems to contain thousands of millions of stars. And it is rotating, like the Milky Way. In another direction there is the great nebula M 31 in the constellation Andromeda, or rather, beyond it, for Andromeda is a part of our own star system. M 31 is 900,000 light years distant from us. It is so vast that light requires nearly 50,000 years to cross from one side to the other. It also is rotating about a center, and in appearance is a huge spiral. Other nebulae are known to be 140,000,000 light years distant. Recent photographs taken at Mount Wilson in California by the great 100 inch telescope indicate the existence of spiral nebulae so far away that their light requires 350 million years to reach us.

These nebulae have been called "island universes", because they are gigantic isolated aggregations of thousands of millions of stars, like our own Milky Way. Most of them seem to be smaller than our own system, while others may be much larger. And there are thousands of millions of these galaxies. A recent photograph, taken at the Harvard Observatory, shows more than two thousand images of outside galaxies, on a plate fourteen by seventeen inches in dimensions. A scientific writer in the February issue of *The Atlantic Monthly*, estimates the total number of galaxies in the universe as of the order of 500 million million.

Einstein considers the universe to be finite, rather than infinite, in extent, and that the total mass of it is equivalent to 10,000,000,000,000,000,000 suns. Einstein also believes that the universe as a whole is spherical, and that a beam of light following the curved surface, would require perhaps 200,000 million years to make a round trip.

The human mind simply cannot comprehend the significance of these colossal numbers. Only by using some feeble comparison can it attach any meaning to them. Compared to the whole universe the earth is as a microscopic grain of sand in all the beaches of all the seven seas.

What are some of the implications of these figures? In the first place, as Sir James Jeans puts it, when we look at one of these tremendously distant objects, we see it not as it is and where it is, but as it was and where it was at the time when the rays of light started on their journey to the earth. When we view the giant nebula in Andromeda through a telescope we see it as it was and where it was 900,000 years ago. If some super-cataclysm had completely destroyed that splendid system, a half million years ago, it would still be shining upon us, and our posterity would continue to receive its light for 400,000 years.

And all of these bodies are in rapid motion. If the forward motion of any galaxy, star, planet, or satellite were to be stopped, that body or system would immediately fall toward the center about which it revolves, and it would lose its identity as a separate object. Eternal movement in the universe is as essential to the continued existence of any unit in it as is the circulation of the blood in the human body.

So when we look at one of the spiral nebulae we know that it is not where it seems to be, but at some other point millions of millions of miles away.

And the spiral nebulae that the Mount Wilson telescope can just barely outline upon the horizon of the universe are 140 million years older than they seem to be. They appear to be white hot; actually, they may be giving out at the present time, cooler, yellowish rays, visible only to our descendants 50 million generations hence.

Returning for a moment to our own neighborhood, there are a few stars so close to us that their light requires only about 75 years to reach us. Suppose that one of these stars had a family of planets and that upon one of these planets there existed people like ourselves. And suppose that on some cloudless night you turn a gigantic telescope upon that planet and you see a small boy playing with his dog. And you say to yourself, "What a wonderful thing it would be to get into communication with that lad, and to exchange experience". And then you suddenly realize that what you are seeing took place 75 years ago. The boy, if living, is an old man now, and the frisky little dog is dead. Seeing is believing, as the old saying has it, but there are qualifications.

The newspapers a few weeks ago announced that the legislature of Tennessee had by a large majority refused to repeal the state law against the teaching of the theory of evolution in the public schools. If one of these legislators could be induced to spend a few nights at the eye piece of a large telescope, and if he were able to interpret the readings of some of the accessory observatory equipment, he would see for himself galaxies, star clusters, stars, and planets in every conceivable state of development, ranging from globular white hot gases, many times more tenuous than the vacuum in the old-fashioned electric light bulb, through bluish white, partly liquid, partly gaseous bodies, yellow stars, giant red stars, cooler stars, and, finally, bodies so cold that they give out no light at all. Even with the naked eye, this doubting Thomas from Tennessee would be able to separate the old stars from the new, and if he were a physicist and mathematician, he could determine for himself the difference in their ages.

James Hutton, one of the fathers of geology, more than a century ago, made this statement: "In the economy of the world, I can find no traces of a beginning, no prospect of an end". It can be shown mathematically that if all the matter in the

universe were uniformly distributed throughout space as an extremely attenuated gas, the attraction of gravitation would cause the gas to condense gradually into immense spherical bodies, of slightly greater density, and that these latter bodies would begin to rotate and eventually condense into stars and form a galaxy. The time required for these changes would be, of course, inconceivably great, and the validity of the theory could not be proved by means of a given example. However, scientists accept this evolutionary hypothesis as true because, as stated a few moments ago, they can see galaxies and stars in every stage of the process. They conclude, therefore, that if an individual case could be observed long enough, it would follow what appears to be an inevitable sequence of birth, growth, and decay.

Let us now, by means of a magic wand, and in the twinkling of an eye, transport the Tennessee legislator to a point 2,000 million light years distant, and let us furnish him with a super-telescope, so that he can keep in touch with what is going on in his old home town. If he were to point his giant instrument in the direction of the solar system he would see it as it was 2,000 million years ago; and he would see it in a location millions of millions of miles from where it is now.

Let us suppose, further, that we are so fortunate in the timing of this excursion into space that our tourist will be privileged to see something that he never saw before and of which he never even dreamed. As he trains his huge telescope directly towards the sun, he notes that something unusual is taking place. A gigantic star is moving swiftly in the sun's direction, and for a time it looks as if there would be a head on collision. The man at the telescope watches the moving star with feverish anxiety. He forgets, or is ignorant of, the fact that what he is seeing took place ages ago, and that the outcome must not have been so terrible, as otherwise he would not be watching the incident now.

The on-rushing star seems to be getting ever nearer to the sun and the observer expects to see the crash at any moment. But it does not happen. The star passes to one side; but as it does so it tears out of the sun, by tidal action, huge volumes of hot gases and liquids, which move off in the direction of the fleeing star. Some of the detached particles are probably drawn into the star. But the greater part of the abstracted material hovers for a time in the field of the two opposing forces, and then begins to revolve around the sun, moving in the direction of the departing star. A particularly large portion condenses into the planet Jupiter; another, into Saturn; and a rather small piece, into what we call the earth. The satellites are either pulled out of the sun or out of the planets themselves by various tidal forces. The larger bodies condense into spheres for the same reason that round drops of oil or water are formed. And that is the story of the birth of the solar system.

Improbable, you say? In an individual case, yes; in the universe as a whole, very probable. When the moon is riding high in the heavens its attractive force lifts the water in the ocean and runs it up the beach; we say that the tide is coming in. Men have noted that phenomenon for thousands of years. It can be shown that, according to the law of probabilities, occasionally two moving stars either crash in a head on collision, or else pass so close to each other that the tidal attraction of the larger body will tear large portions out of the smaller one, or perhaps disrupt it altogether.

Sir James Jeans states that the stars are so sparsely scattered in the universe that they can be compared to three wasps flying around in a globe three thousand miles in diameter. If these wasps were blindfolded, and if they moved approximately as fast as the average star, it can be shown by means of a mathematical discussion, that once in about a billion years two of the wasps would collide with each other. As there are billions of billions of stars in the universe, it is highly probable that there have been billions of head on collisions between stars, and many more approaches close enough to bring into effect the tidal action which has been referred to. As a matter of fact, it is found that about one quarter of all the stars that we see are double or multiple, and that these bodies are usually revolving about a common center of gravity. This is exactly what would happen if two or more stars were to approach each other close enough to come within their mutual attractive forces, but not close enough to tear one or the other into pieces.

Also, there are the so-called novae or new stars, which flash out suddenly from a point where no star was visible before. About twenty of these occurrences take place each year. It is believed by some astronomers that a possible cause may be the collision of two dark bodies. If two of them moving at terrific speed were to meet head on, the heat generated would be sufficient to convert at least a part of their substance into a white hot gas.

It is quite likely, therefore, that the earth came into being as the result of what has been referred to, rather loosely, as an accident. As a matter of fact, it was no more an accident than is an eclipse of the sun. If we knew more about the motions and other characteristics of the heavenly bodies, it would be possible for a super-mathematician to calculate the time and location of a collision or near collision between any two moving stars. The German astronomer, Oppolzer, calculated the elements and dates of all the solar and lunar eclipses occurring between the years 1207 B. C. and 2162 A. D.

The earth's beginning was a perfectly natural event, and there is no need to assume, either that it was accidental, in the ordinary acceptation of the term, or that it was due to the arbitrary interference of some power or influence not inherent in the universe itself.

After the separation from the sun, there followed

a tremendously long period of cooling, condensation and solidification. Just how many years were required for this, no one knows. An examination of a number of radio-active minerals in Canada seems to indicate that, in that country at least, the earth's crust must have been solid about 1,700,000,000 years ago.

The next important event was the appearance of a few primitive forms of what we call life, possibly about one billion years ago. We do not know how this came about, but we do not believe that it was accidental, or that it was the result of interference from the outside. Herbert Spencer was roundly denounced because he said that life originated as a result of a "fortuitous concurrence of atoms". That was a high brow way of saying that at some prehistoric time a few particles of matter and energy in a pool of dirty water became associated in just the right proportions to form the first living germ. It is exactly what would happen according to the law of probabilities, given enough time and a favorable environment. Again, there is no occasion for any timorous soul to call in assistance from the outside; Nature is quite able to take care of herself.

Finally, possibly one million years ago, crude types of human beings began to appear, the products, no doubt, of an inconceivably long period of development. As these beings increased in wisdom and stature they also increased in self-assurance and self-importance, so that they came to believe that the whole universe was created solely for their use and enjoyment. Presumably, the lowly earth worm, groveling in the darkness, believes that he also is some pumpkins and is deserving of respectful consideration. And so he is. for Charles Darwin wrote a whole book about him. Therefore, let us not attempt to destroy any illusions that he may have: we may be just as crazy as he is.

Run of the Mine

The Flag and the Constitution

Two important anniversaries were celebrated in September. The citizens of Baltimore celebrated the birth of the national anthem, "The Star Spangled Banner." On September 13, 1814, Francis Scott Key, while watching the bombardment of Fort McHenry by British guns, wrote his immortal song on a rough scrap of paper.

"Tis the star-spangled banner, O long may
it wave,
O'er the land of the free, and the home
of the brave."

On September 17, 1787, the Constitution of the United States, by a majority of the fifty-five dele-

gates from twelve states, was formally adopted and made the supreme law of the land. The one hundred and forty-eighth anniversary of the adoption of the Constitution was celebrated last month, nation-wide, and in addition it was made the subject of many excellent newspaper and magazine articles.

The most studious and patriotic article we read, was an editorial published in The Omaha World-Herald, of Omaha, on September 17. The author-editor was Mr. Harvey E. Newbranch, a Democrat, who wrote his editorial from a wholly patriotic standpoint. This editorial, worthy of most careful reading, is set forth below:

OUR CONSTITUTION

"A celebrated American patriot once described the Constitution as 'a covenant with death and an agreement with hell,' and a mass meeting held at Fanueil hall, in Boston, resolved that it should be 'immediately annulled.'

"A great British statesman, on the other hand, lauded our fundamental law as 'the most wonderful work ever struck off at a given time by the brain and purpose of man.'

"William Lloyd Garrison spoke in the white heat of the slavery discussion. After a long and bloody war among the states, the Constitution was submitted to a major surgical operation and the cancer he so righteously hated was cut out of it.

"Gladstone spoke in the spirit of philosophical and judicial calm, after that operation had been performed. His verdict is generally accepted, not alone by Americans, but by lovers of free and popular government everywhere.

"The framers of the American Constitution, assembled from a sparse and raw frontier population, were indeed a remarkable body of men. It is doubtful if ever we shall look upon their like again. It is more than doubtful if the same number of Americans of equal caliber could now be brought together for a like purpose. This not because there are not men of equal ability, of the same sterling patriotism, as learned in the problems of government. But rather because it is more difficult in this day for the wise and judicious to control popular passion and prejudice and to overcome the operations of the modern party machinery and selfish class organizations in cities, states and nation. As a rule, we do not choose our best and ablest to make our laws and make them impartially. The stream rises little higher than its source. But the stream that made our Constitutional convention rose so high above its source that it produced one of the marvels of all the ages. Such miracles do not happen often.

"There is the better reason, therefore, why we of America should hold our Constitution

in veneration and protect jealously the purposes and ends its framers planned to assure to us as a priceless heritage.

"Nor was it the rule of the dead hand they sought to impose. Living themselves in the midst of change, they were well aware of the need of providing for it. So they made of the Constitution an elastic document, subject to amendment and revision in a safe and orderly manner. But they insured against its mutilation in haste and passion, without due thought and deliberation. They required that before any amendment could be adopted, it must first meet the approval of two-thirds the members of each house of congress and then be ratified by three-fourths of the states, each state, regardless of population, having an equal vote.

"Within a few years, 10 highly important amendments were proposed and adopted. They constitute our Bill of Rights, safeguarding the personal liberties of all citizens. Since then there have been 11 more amendments. One of them, for national prohibition, was first adopted, then repealed within little more than a decade. Even in tinkering with their fundamental law, the people were left with adequate remedy for their own errors.

* * *

"Our Constitution is no magical instrument. It is distinguished for its caution, its common sense. Its framers were solemnly aware they were setting up a rule for that most difficult of arts—the art of popular government. They sought to set up a form of free government strong enough to endure, but not strong enough to oppress. They sought to protect the people against the abuses that might tempt those charged with authority, and also to protect the people against themselves. They set up protection for minorities against the might of majorities. Fearing that centralized power might become despotic, they kept as a barrier against its aggrandizement the essential sovereignty of each state joining in the federation. In each state, however, they required a division of powers, as in the federal government, so that each—executive, legislative, judicial—might keep watch and ward on the other.

"It was a government of law they established, not a government of men. And the law was to represent the popular will, be under popular control, be made and executed in the common interest. Those who constituted the government, who made and administered its laws, were to be always within the reach of the people. The president himself was to be elected for but four years, so that the people who had made could, with equal facility and definiteness, unmake.

"A complicated system, our constitutional system. It has not always worked as its found-

ers intended. It has not always worked well, never perfectly. But in a century and a half it has worked better than any other system the world has known. It has preserved for all Americans liberties and rights that are priceless—and that today in other lands are impudently challenged.

* * *

"Said Adolf Hitler in Nurnberg the other day:

"We do not believe in ludicrous, talkative democracy. We are not a chicken farm, where everybody runs helter-skelter and everybody cackles. We learn to obey one will, and act in unison in accordance with that will.

"Every German belongs, not to himself, but to the nation. We do not evaluate a young man by the number of glasses of beer he can guzzle, but by the punishment he can take; not by the number of nights he can spend cavorting, but by the number of miles he can march.

* * *

"For no man to have his own opinion or express them. For none to have personal rights. For the will of one man—der fuehrer—to rule over all and for all implicitly to obey it. For the individual life, with all its dreams and plans and hopes, to belong only to the state. And for the state to 'evaluate' that life only in terms of its usefulness in military service—or, if a woman's life, its capacity to produce cannon fodder.

"This is what the fascism of Hitler and Mussolini means. In the ultimate, it is what the communism of Stalin means. The state is over all and the oligarch or oligarchy is the state.

* * *

"It is against this challenge to human rights and happiness, against this menace to the souls and minds, as well as the bodies of all men and women, that our American Constitution stands as a bulwark. It limits, it defines, it restricts, the power of rulers and lawmakers. Equally it limits, defines, restricts, the power of majorities. It serves and protects the citizen himself, however great, however humble. Insuring liberty, it estops it from degenerating into license. The citizen, not the state, is sovereign. But the citizen, no more than the state, is absolute sovereign. Individually and collectively, he must observe and respect the rights of others.

"All this, and more, the Constitution does for us. It has earned, not alone our veneration, but our active and grateful championship. Not merely the championship of the partisan politician, wrapping both it and the flag about him for partisan purposes, but the champion-

ship of all the people who love country above party and whose devotion to the sublime purposes of the Constitution is not limited to its literal text."

Tax the Rich

THE recently enacted tax bill, written to "tax the rich," together with its provision for what would prove to be confiscation in the form of an exorbitant inheritance tax, struck hard at the industry developed by Henry Ford, of the Ford Motor Company of Detroit, Michigan.

Mr. Ford, it will be recalled, refused to accept the N. R. A., holding that the spirit of the act had been applied to the Ford Motor Company for more than thirty years.

Mr. W. J. Cameron, of Dearborn, Michigan, speaking for Mr. Ford, recently said:

"As for the 'tax-the-rich' campaign, Ford is not rich.

"Ford has the factories, the service and a surplus—and if you want to keep on running even when you lose 68 million dollars in one year you need a surplus.

"We think it is simply 'a break up Ford' campaign.

"Every form of attack has been made to gain control of the Ford company. Banks have been pulled out from under us. Unions have struck here and there. Men have come with hundreds of millions of dollars to buy in.

"Now comes this idea of breaking up great fortunes.

"We asked them in Washington: 'What do you expect to do then? Send a tractor to smite the factory apart and take two-thirds of it to Washington?'

"'Oh,' they said, 'you can sell stock.'

"And that's the game.

"In 32 years the public has paid into the Ford Motor Co. twelve and a half billion dollars. To hear them talk in Washington you'd think that was all theirs and ought to be divided. Twelve billions three hundred and ninety-five millions of that was paid out in wages, materials, taxes and plant.

"How much does that leave?

"A few millions of surplus that were a God-send to the country during the depression."

"Ford knew his prosperity was interlinked with that of 5,300 other companies. He believed the best thing he could do for his country was to keep on building cars.

"He never allowed anyone to say he lost that 68 million dollars. He says he spent it. Others would be called philanthropic for doing that. He scorns the word.

"Henry Ford at 72 is not standing in the stern of his ship looking back. He is in the

bow looking ahead, seeing the problems to come—and some of them he has in his pocket already.

"When the NRA came, Ford went off in the woods by himself and thought it all out. Then he took his stand as a plain American citizen. He knew he would suffer and he did until up from the south came the break in the boycott."

Tenacious Office Holders

WHEN the Supreme Court killed the N. R. A. codes on May 27 last, the administrative and clerical forces totaled 5,547, with a monthly payroll of \$984,346.

On September 9, three months and twelve days dead, the N. R. A. forces still numbered 3,042, the monthly payroll \$650,000.

Mechanical Loading of Bituminous Coal

THIRTEEN bituminous coal producing states loaded a substantial tonnage mechanically in 1934, and seven additional states loaded a nominal tonnage. We reproduce herewith the figures prepared by the U. S. Bureau of Mines, and made public September 14, 1935. From the table following, we find that Wyoming leads in per cent of coal loaded mechanically, Montana following closely, with its large stripping output:

PER CENT OF TOTAL BITUMINOUS DEEP-MINED OUTPUT PRODUCED BY MECHANICAL LOADING IN 1933 AND 1934

State	Per cent of State Total Mechanically Loaded	
	1933	1934
Wyoming	75.8	84.1
Montana	79.5	79.1
Indiana	48.6	63.3
Illinois	53.9	52.1
Utah	20.6	24.9
Washington	19.4	24.6
Alabama	16.0	11.2
Pennsylvania (bituminous)...	8.5	7.3
Ohio	5.5	6.0
Virginia	4.5	4.2
Kentucky	2.2	2.0
West Virginia	0.8	1.4
United States	12.0	12.2

The tonnage loaded mechanically is set out in the next following table, where Wyoming, due to its meager total output, takes third place in increase of coal loaded mechanically:

INCREASE OR DECREASE IN TONNAGE MINED MECHANICALLY UNDERGROUND, 1933-34

State	1933 Net Tons	1934 Net Tons	Increase	Decrease
Illinois	17,121,626	18,482,347	1,360,721	
Indiana	4,222,355	5,402,686	1,180,331	
Wyoming	2,969,920	3,571,604	601,684	
West Virginia	794,280	1,364,936	570,656	
Ohio	1,028,668	1,136,398	107,730	
Washington	270,858	340,685	69,827	
Montana	1,087,328	1,148,428	61,100	
Utah	551,172	599,493	48,321	
Virginia	370,305	384,956	14,651	
Colorado	70,967	65,076		5,891
Kentucky	789,755	743,629		46,126
Pennsylvania (bituminous)	6,682,468	6,547,978		134,490
Alabama	1,389,308	1,071,286		318,022
Other States	471,451	573,233	101,782	
Total	37,820,461	41,432,735	3,612,274	

The character of loading machines used is set out in our third following table, which indicates that mobile loading machines gained 16.1 per cent, duckbills and other self-loading conveyors, 25.7 per cent. and scraper loaders 1.4 per cent. Pit car loaders fell off 2.8 per cent. while other hand-loaded conveyors increased 10.4 per cent.

TONNAGE OF BITUMINOUS COAL PRODUCED MECHANICALLY UNDERGROUND IN 1934

	Net Tons	Per Cent
Mobile loading machines..	20,749,534	50.1
Scraper loaders.....	1,004,480	2.4
Pit car loaders.....	11,088,919	26.8
Other conveyors, including duckbills	8,589,802	20.7
Grand total, mechanized mining	41,432,735	100.0

The total production of bituminous coal for 1934 was 358,395,000 tons, based upon preliminary estimates, and the total tons loaded mechanically 41,432,735, or 11.5 per cent. The growth has been a steady one for some years, despite a tragic falling off in total production, the volume loaded mechanically in 1927 but 16,500,000 tons.

Railroading in 1831

ON MAY 22, 1830, the first railroad in America went into operation. This was the Baltimore and Ohio, extending from Baltimore to Ellicott's Mills, fourteen miles. The initial trip was made by using a car rigged up with a sail.

On August 28, 1831, the first steam locomotive, the "Tom Thumb," was placed in service, making the run to Ellicott's Mills in an hour and a quarter. the return trip made in fifty-seven minutes.

With the advent of the "Tom Thumb," steam railroading came into being in America.

Meanwhile, the second American railroad, the Charleston and Hamburg, in South Carolina, purchased the "Best Friend," built at the West Point Foundry, near New York City. This little locomotive attained a speed of from sixteen to twenty-one miles per hour, with from forty to fifty passengers on four or five cars, or thirty to thirty-five miles per hour without cars. Unfortunately, her negro fireman, not satisfied with the ordinary process of getting up steam, fastened the safety valve down, with the result that the darky went heavenward.

On July 30, 1831, the locomotive "West Point," which followed the "Best Friend" into service, was tried out, as shown by an article printed in The Charleston Courier dated August 1, 1831. This article, reproduced in Bulletin 37 of The Railway and Locomotive Historical Society, is set forth below. The "barrier car" loaded with baled cotton, was provided for the protection of the passengers in the event of a second boiler explosion.

"On Saturday afternoon, the Locomotive Engine 'West Point' underwent a trial of speed, with the barrier car and four cars for passengers, on the Rail Road.

"There were 117 passengers, of which number 50 were Ladies, in the four cars, and 9 persons on the engine, with 6 bales cotton on the barrier car, and the trip to the Four Mile House, $2\frac{3}{4}$ miles from the starting point, was completed in 11 minutes, when the cars were stopped 2 minutes to oil the axles—and the $2\frac{1}{4}$ miles to the Fork of Dorchester Road was completed in 8 minutes.

"The safety which has been insured by the introduction of the barrier car, and the improvements in the formation of the flanch

(flange) of the wheels, which, we learn, was made by one of the young mechanics of this city, (Mr. J. D. Petsch) steam engineer in the Company's service, will no doubt elicit a portion of patronage. In the ensuing week we hope to be able to announce to the Stockholders the opening of 11 miles in continuation from the City. The new Steam Car works admirably, and the safety valve being out of reach of any person on the engine, will doubtless contribute to the prevention of accidents in the future.

"The work is in active progress along the line of Road, and we learn that many of the Contractors between Cypress and Edisto have already completed considerable portions of their work. That nearest town is, and will be in continued progress, notwithstanding the warmth of the weather."

That "Safety" was in the minds of the builders is evidenced by the fact that the safety valve was placed out of reach of the fireman. We can recall the locomotives of the 1870's which were equipped with a spring balance safety valve, by which aspiring engine crews could add five pounds to the one hundred and twenty pounds maximum allowed by the rules, and we all recall reading how the old-time Mississippi River steamboat engineers "put a nigger on the safety valve," when they wished to overhaul and pass a rival boat. As John Hay wrote:

"The Novastar was a better boat.
But the Belle she wouldn't be passed.
And so she came tearin' along that night—
The oldest craft on the line—
With a nigger squat on her safety valve.
And her furnace crammed, rosin and pine."

What Is In a Name?

ALL of the romance has not as yet gone out of the British coal mining industry. "The Colliery Guardian," in a recent issue, in commenting on the report covering the coal industry of England and Wales, suggests that the volume "should be a joy to the etymologist." Referring to the strange callings listed, the *Guardian* notes:

"Amongst the officials we have a bargain man, a beagle driver, a brow major, a bumper, a cotcher, a cropper, a fang manager, and a pughunter; with the hewers a bater, hagger, a hatchen driver, a marketman, a pompom man, a pug lifter, a scabby, a scuffer, a scuffler, a scutcher, and a stretman; on the haulage roads we may, perchance, fall in with a balancer, a bencher, a block knocker, a bummer, a chackler, a clammer, a cleekman, a cousie runner, a cranefooter, a cuddy lad, a drag boy, a dram lad, a dukey rider, a foal, a gal driver,

a giggerer, a ginney tenter, a glan rider, a gugman, a hillman, a jink carrier, a kincher, a link boy, a nibbler, a papper lad, a slotter, a snapper, a snecker, a snibbler, a spunney boy, a tracing driver, a tugger, or a weigh-end boy; on repair work we have dinkers, fall riders, grey cutters, lippers, pelters, pucking cutters, and windroad or windway men; the others below ground include a back lichter, a band walloper, a blow Georger, a bobby lad, a brancher, a cementator, a changer and grather, a chockler, a choppie leader, a compass boy, a crow picker, a cyphon minder, a dilker, a dirgler, a dirtler, a ganten cutter, a hint lad, a lockshopman, a ramble man and a shanker; and on the surface are to be found an apparatus lad, a bog teemer, a caster, a click boy, a justice keeper, a knapper, a pin boy, a scree-man, a slade picker, a tally boy, a veerer, and a wailer. And we have not touched Scotland."

Potato Control Legislation

PERHAPS we should not take the Guffey Coal Control Bill too seriously; on the other hand, we might look at the potato control amendment to the AAA.

This amendment to the Agricultural Control Act, brings every person who raises and sells five or more bushels of potatoes, under a law which provides:

That the raiser secure from the government a potato quota:

That he pay a tax of forty-five cents per bushel of potatoes raised and sold, above this quota:

That all potatoes must be packed in a certain uniform type of container, prescribed by the Commissioner of Internal Revenue;

That failure to comply with the law subjects both the producer and the buyer to imprisonment or a fine of \$1,000.

Potatoes are a poor man's crop, boys raise potatoes to sell or trade for the things they could not otherwise secure. In small industrial communities, working men reinforce their incomes with a potato patch. This law is "regimentation" with a vengeance, and it was put through the House by a vote of 64 to 15.

We were told in Washington that the Guffey bill was passed in the House by trading "potato control" votes for coal control votes. In the Senate, the bill was sponsored by Senator Bailey of North Carolina, a strong advocate of state rights, and a highly vocal foe of "regimentation." Senator Borah, who has repeatedly voiced his disapproval of monopoly and price fixing, also supported the bill.

This law may not go to the Supreme Court, small potato raisers cannot afford "lawing." the

men who raise hundreds of acres of potatoes can buy the containers and charge the cost to the user. Potatoes are yet the poor man's food. To the credit of the AAA, it must be said that they opposed the Act, but members of a Congress who often failed to even read the bills for which they voted too frequently placed the trading privilege above patriotism.

Another Diesel Locomotive

THE most powerful Diesel locomotive in the world, built to haul the Sante Fe Railroad's through passenger train, "The Chief," recently arrived in Chicago for test purposes.

The locomotive, built by the Electro-Motive Corporation, is expected to haul "The Chief" between Chicago and California on a faster schedule than at present. The locomotive is 127 feet long, weighs 240 tons, and is rated at 3,600 horsepower. It is, in effect, two locomotives, since it consists of two identical units that can be operated singly or coupled together. The units are arranged for double-end operation, with an operator's cab and control station at either end.

Texas Natural Gas in Detroit, Michigan

WILLIAM G. WOOLFOLK, president of the Detroit City Gas Company, said on August 31, that the Panhandle Eastern Pipe Line Company would begin construction about January 1, of a 300-mile extension of its line to bring natural gas into Detroit by July 1, 1936. The line now ends at Dana, Indiana. A twenty-four inch extension, to cost approximately \$20,000,000, will be laid.

The gas company announced August 30 that it had signed a contract with Panhandle Eastern for delivery of a peak load of 90,000,000 cubic feet of Texas gas daily.

Comedians All

ALL members of the crow tribe seem to have a touch of humor. I have had several as pets, and some have really enjoyed a game. I now have a tame magpie which will play "hide the thimble." He will take any small article I give him, then, when he thinks I am not looking, he hides it under a leaf or some other object, placing rubbish over it. When I get hot on the trail, he jumps about and utters remarkable notes. When I unearth it, he will take it again to try another spot.

A tame jackdaw would sit on the carriage of my typewriter, trying his best to keep his balance as it travelled along with a series of jerks, then he would pretend to go to sleep, with his little head nodding as I tapped the notes. But I had to keep a sharp

watch upon him, for he would sometimes pounce suddenly on to the page I had carefully typed, and attempt to tear it to pieces.

On two occasions this little villain wrecked fountain-pens: it was the gold nib that always attracted him and in each case this was twisted out of shape. A tame rook would always attempt to untie visitors' shoe-laces.

It is not often that we see two staid old wild birds joining in a game, but I know of one instance. A friend was walking along a sandy shore with a puppy. It was chasing rabbits on the dunes, and at last followed one to its hole, but bunny popped in before he could catch it. The puppy tried to force his plump body down also, but stuck half-way with his stumpy tail working backwards and forwards furiously.

On a rocky cliff beyond the dunes a pair of old ravens had their home. One of the birds was quartering the shore and saw the wagging tail of the puppy. The bird flew down and walked towards this suspiciously at first, but when he knew that it was a dog, he caught the tail in his beak and gave a hearty pull. Then he fluttered above the puppy as he came out to bark furiously.

A few days later the puppy was going over the same dunes, when he suddenly stood still and looked down to sea. Just above the water he saw his old enemy, the raven, with its mate.

The two birds were about twenty yards apart, searching for food. Here was a chance for revenge. The puppy bristled his fur, then went full speed towards the nearer bird. The ravens were not alarmed. Nearer the puppy got to his bird, then, when he expected to capture him, the raven leapt nimbly up, and the dog lost his balance to tumble head over tail along the sand.

He saw the other bird, darted at this, and the same thing happened. Raven number one had now settled, so the puppy again went for him. So the game progressed. Each time the dog charged, the cunning birds jumped up and allowed him to rush under them. At last he put his little tail between his legs, and crawled back to his master.

—O. G. Pike. *F.Z.S. in Tit-Bits.*

Aid to Illiterates

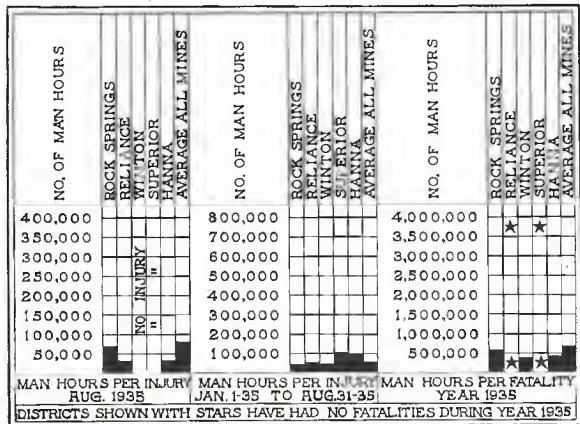
Lord Balfour praises the waiters that he met in Washington at the Conference on Limitation of Armaments, and tells the following story:

"I was at a hotel where all the waiters were colored men. On the first evening I pushed away the menu and gave the waiter a coin.

"Just bring me a good dinner, Uncle," I said. He brought me an excellent dinner. I continued this plan for a fortnight. When I left, my waiter said to me, 'Good-bye, sah, an' good luck, and when yoh or any yoh frien's come here what can't read the menu, jes ax foh Calhoun Clay.'"

» » » Make It Safe « « «

August Accident Graph



AUGUST, a month in which the mines worked about half time, shows that three lost-time injuries were sustained by experienced workmen. *Carelessness* is a word frequently used in expressing the cause of many personal injuries. The word *careless* may be defined as heedless, inattentive, thoughtless or unobservant. Read the condensed description of each of the three lost-time injuries happening during the month and see if they would be classed under one or the other of these definitions of the word *careless*.

It is much better to be *attentive* to the work you are doing, *careful* of the manner in which you are doing it, *thoughtful* of the consequences of using wrong methods, taking "short cuts", violating rules and regulations by yourself and fellow workmen, and, by all means, be *observant* of conditions surrounding your work, in order that you, Mr. Miner and your "Buddies", may not be severely injured.

COMPENSABLE INJURIES AND MANHOURS BY MINES

AUGUST, 1935

Place	Man Hours	Injuries	Per Injury
Rock Springs No. 4...	25,060	0	No Injury
Rock Springs No. 8...	29,568	1	29,568
Rock Springs Outside	14,424	0	No Injury
Reliance No. 1.....	21,532	1	21,532
Reliance Outside ...	8,505	0	No Injury
Winton No. 1.....	37,618	0	No Injury
Winton Outside	9,065	0	No Injury
Superior "B".....	16,919	0	No Injury
Superior "C".....	18,676	0	No Injury

Superior "E".....	14,987	0	No Injury
Superior Outside.....	11,298	0	No Injury
Hanna No. 4.....	23,716	1	23,716
Hanna Outside	10,733	0	No Injury

PERIOD JANUARY 1 TO AUGUST 31, 1935

Place	Man Hours	Injuries	Per Injury
Rock Springs No. 4...	191,464	3	63,821
Rock Springs No. 8...	289,044	11	26,277
Rock Springs Outside	105,946	0	No Injury
Reliance No. 1.....	196,805	4	49,201
Reliance Outside.....	68,264	1	68,264
Winton No. 1.....	311,283	9	34,587
Winton Outside.....	68,775	0	No Injury
Superior "B".....	146,342	0	No Injury
Superior "C".....	138,768	3	46,256
Superior "E".....	144,277	2	72,139
Superior Outside.....	85,701	0	No Injury
Hanna No. 4.....	195,202	3	65,067
Hanna Outside.....	89,163	0	No Injury

COMPENSABLE INJURIES AND MANHOURS BY DISTRICTS

AUGUST, 1935

Place	Man Hours	Injuries	Per Injury
Rock Springs	69,052	1	69,052
Reliance	30,037	1	30,037
Winton	46,683	0	No Injury
Superior	61,880	0	No Injury
Hanna	34,449	1	34,449
<i>All Districts</i>	242,101	3	80.700
<i>All Districts, 1934</i> ...	250,325	12	20.860

PERIOD JANUARY 1 TO AUGUST 31, 1935

Place	Man Hours	Injuries	Per Injury
Rock Springs.....	586,454	14	41,889
Reliance	265,069	5	53,014
Winton	380,058	9	42,229
Superior	515,088	5	103,018
Hanna	284,365	3	94,788
<i>All Districts</i>	2,031,034	36	56,418
<i>All Districts, 1934</i> ...	1,738,336	30	57,945

The Accident at Winton Mines

ON THURSDAY, September 12, 1935, at about 5:45 P. M., a disastrous accident occurred in a rock tunnel which is being driven from No. 3 South Entry, Winton No. One Mine, to No. Seven and one-half Seam. The work was started in the latter part of June, and the tunnel was to be driven a distance of about 700 feet. The face of the tunnel had reached a distance of about 400 feet when the accident occurred.

Two shifts of five men each were employed, the night shift and the day shift, the two shifts being continuous, the night men starting at 3 p. m. when the day shift knocked off.

Immediately after the accident, word was received at the general office that an accident had occurred in which the entire night shift, consisting of B. J. Randall, shift leader, David Greek, Harry Horn, James Noble and Rudolph Krazovich, were involved. The men were promptly removed to the Wyoming General Hospital, where doctors and nurses worked heroically to alleviate their injuries, which were as follows:

B. J. Randall, American, age 39, married; compound fracture and muscles torn off right thigh, necessitating amputation of leg.

David Greek, American, age 20, single; fracture of skull, severe laceration of right shoulder, arm, and side of chest.

Harry Horn, American, age 31, single; fracture of skull, concussion of brain, and fracture of right leg just above ankle joint.

James Noble, Scot, age 65, single; double fracture of left leg below knee and several fractured ribs.

Rudolph Krazovich, American, age 29, single; scalp and facial lacerations, bruises of back and left leg.

After preliminary care had been rendered the injured men, the doctors were hopeful of recovery, until on Saturday afternoon, September 14, Mr. Randall began to sink rapidly, dying later in the afternoon. On the following night, Mr. Greek died, and on the 16th, Mr. Horn also passed away. As this article is written, Mr. Noble is improving slowly, Mr. Krazovich practically recovered.

Much credit is due Mr. Krazovich for the prompt manner in which he handled the emergency. Less seriously injured, he was able to reach a telephone and give the alarm, and immediately, a number of mine employes, with Dr. Krueger, the resident physician and surgeon at Winton, went into the mine, administering first aid treatment and preparing the injured men for removal.

As to the cause of the accident, a preliminary investigation indicates the following situation: When the tunnel was started, instructions were given to both crews that on the completion of the drilling, the drilling machines were to be removed and the electric power shut off. Thereafter the expl-

sives were to be made up at a distance from the face, and then carried up to the face for use. The instructions were evidently disregarded, the investigation developing that at the time of the accident, the drilling of the face had not been fully completed, twenty out of twenty-two holes drilled. Eight of these holes were found, after the accident, fully tamped, one hole was found with the explosives in place, untamped, and one hole had been discharged. The discharge of the shot which brought about such fatal results was occasioned by one of the drills being driven into a charged drill hole, the contact between the drill point and the explosives precipitating the disaster.

To criticize men who have paid the full penalty of the disaster, seems harsh, and in this instance three men lost their lives, one leaving a widow who sorrows for him, much physical and mental suffering endured by all of the five men, as well as their friends and relatives.

Rules governing the safety of men working in an occupation as hazardous as mining can never be made to cover every possible situation, any more than traffic rules, however studied and written, will prevent highway accidents, now costing the nation 36,000 human lives annually, with approximately one million serious non-fatal injuries. Such rules as are written carry a double responsibility; the responsibility of the management for the enforcement of same, and of the employe for their cheerful observance.

The little town of Winton mourns the loss of these men, and the safety record which our mine management and employes have so valiantly built up, has received a bitter set-back. A life is a life, and if every man connected with the property, regardless of position, would solemnly resolve that no fatalities will occur on the property for two years, a result that can be attained, then perhaps we can say that something of redeeming character came out of the most unfortunate accident suffered at Winton.

Two safety measures proved their value; the hard hats worn by the men proved a definite protective measure, and the goggles prevented the loss of eyesight to all of the five men. The glasses worn by the five men showed on examination that each bore the appearance of having been subjected to something equivalent to the effect of sand blasting.

WHAT'S THE HURRY?

Mike and Pat went up in a captive balloon to see what they could see.

A storm broke and tipped both of them out of the basket.

Frantically Mike reached out and grabbed the seat of Pat's pants and Pat looked back reproachfully and said: "Say Moike, do yez hov to be pushin' me. Can't yez see that oim goin' fast enough already?"

Standings of the Various Sections in the Annual Safety Contest

IN AUGUST, three new sections were added to the total number of sections, making 68 in all.

Twenty-three, or over one-third of the total number, have one or more injuries in their respective sections.

There remain four more months in the year

before it is finished. Are you thinking of those two trips to Alaska with all expenses paid and all of those cash prizes? If you expect to participate in this event, don't eliminate yourself and section by getting a personal injury. Work safely every day and look after your "Buddy".

Section Foreman	Mine and Section	UNDERGROUND SECTIONS		Lost Time Injuries	Man Hours Per Injury
		Man Hours	Section		
1. John Zupence	Rock Springs 8,	48,588	2	0	No Injury
2. J. H. Crawford	Hanna 4,	41,737	1	0	No Injury
3. Ben Cook	Hanna 4,	41,234	3	0	No Injury
4. Franke Hearne	Hanna 4,	40,358	2	0	No Injury
5. Steve Kauzlarich	Winton 1,	36,638	1	0	No Injury
6. Clyde Rock	Superior C,	34,699	5	0	No Injury
7. Steve Welsh	Reliance 1,	32,074	6	0	No Injury
8. Joe Goyen	Superior B,	31,913	5	0	No Injury
9. C. L. Wilson	Winton 1,	31,094	4	0	No Injury
10. Clifford Anderson	Superior C,	29,596	4	0	No Injury
11. Grover Wiseman	Superior B,	29,533	1	0	No Injury
12. Austin Johnson	Superior C,	29,309	3	0	No Injury
13. Richard Arkle	Superior B,	28,469	2	0	No Injury
14. Roy Huber	Superior B,	28,231	4	0	No Injury
15. W. H. Welsh	Superior B,	28,196	3	0	No Injury
16. Ben Caine	Superior E,	27,846	1	0	No Injury
17. Sam Gillilan	Superior E,	27,356	2	0	No Injury
18. Reynold Bluhm	Rock Springs 4,	27,246	6	0	No Injury
19. Thomas Whalen	Superior C,	27,069	2	0	No Injury
20. Eliga Daniels	Rock Springs 8,	26,987	2	0	No Injury
21. William Greek	Reliance 1,	24,360	1	0	No Injury
22. Evan Reese	Reliance 1,	23,002	2	0	No Injury
23. Thomas Robinson	Superior E,	22,708	3	0	No Injury
24. John Traeger	Rock Springs 4,	21,917	5	0	No Injury
25. Henry Bays	Superior E,	21,434	6	0	No Injury
26. Clem Bird	Winton 1,	19,460	11	0	No Injury
27. Alfred Russell	Rock Springs 4,	18,993	7	0	No Injury
28. John Cukale	Rock Springs 8,	18,174	1	0	No Injury
29. John Valco	Winton 1,	16,863	12	0	No Injury
30. Sylvester Tynsky	Winton 1,	10,528	6	0	No Injury
31. Ed While	Hanna 4,	8,248	5	0	No Injury
32. Lester Williams	Rock Springs 4,	7,952	8	0	No Injury
33. J. H. Wise	Winton 1,	7,826	13	0	No Injury
34. Matt Marshall	Rock Springs 8,	7,624	7	0	No Injury
35. John Sorbie	Rock Springs 8,	6,511	8	0	No Injury
36. George Wales	Hanna 4,	5,938	6	0	No Injury
37. Ed Christensen	Rock Springs 4,	5,024	10	0	No Injury
38. James Harrison	Hanna 4,	4,567	8	0	No Injury
39. James Reese	Rock Springs 4,	3,968	9	0	No Injury
40. Gus Collins	Hanna 4,	3,391	9	0	No Injury
41. John Copyak	Rock Springs 4,	2,722	11	0	No Injury
42. M. A. Sharp	Winton 1,	2,485	14	0	No Injury
43. C. E. Thorbro	Rock Springs 4,	2,149	12	0	No Injury
44. John Cameron	Rock Springs 8,	1,568	9	0	No Injury
45. B. J. Randall	Winton 1,	1,162	15	0	No Injury
46. James Whalen	Rock Springs 8,	70,732	3	1	70,732
47. Ben Lewis	Rock Springs 8,	50,917	5	1	50,917

48.	Charles Grosso	Reliance	1,	Section 3	46,627	1	46,627
49.	Joe Jones	Hanna	4,	Section 4	43,986	1	43,986
50.	Ernest Besso	Winton	1,	Section 5	41,818	1	41,818
51.	Homer Grove	Reliance	1,	Section 4	39,893	1	39,893
52.	R. T. Wilson	Winton	1,	Section 10	28,469	1	28,469
53.	James Henderson	Winton	1,	Section 9	26,691	1	26,691
54.	George Harris	Winton	1,	Section 8	26,481	1	26,481
55.	Paul Cox	Superior	E,	Section 5	26,159	1	26,159
56.	John Adams	Rock Springs	4,	Section 4	24,544	1	24,544
57.	Andrew Spenee	Winton	1,	Section 7	23,667	1	23,667
58.	Andrew Young	Rock Springs	8,	Section 4	22,257	1	22,257
59.	Richard Haag	Superior	E,	Section 4	18,774	1	18,774
60.	H. Krichbaum	Rock Springs	4,	Section 3	31,788	2	15,894
61.	Tom Hall	Reliance	1,	Section 5	30,849	2	15,425
62.	Arthur McTee	Rock Springs	8,	Section 1	51,254	4	12,814
63.	C. E. Williams	Winton	1,	Section 2	19,992	2	9,996
64.	John Peternell	Winton	1,	Section 3	18,109	2	9,055
65.	R. J. Buxton	Rock Springs	8,	Section 6	29,593	4	7,398
66.	Adam Flockhart	Superior	C,	Section 1	13,944	2	6,972
67.	L. Rock	Superior	C.	Section 6	4,151	1	4,151
68.	James Hearne	Hanna	4,	Section 7	5,743	2	2,872
TOTAL ALL UNDERGROUND SECTIONS, 1935					1,613,185	35	46,091
TOTAL ALL UNDERGROUND SECTIONS, 1934					1,355,563	28	48,413

Section Foreman	OUTSIDE SECTIONS		Man Hours	Lost Time	Man Hours
	District			Injuries	Per Injury
1. H. J. Harrington	Rock Springs		105,946	0	No Injury
2. E. R. Henningsen	Hanna		89,163	0	No Injury
3. Port Ward	Superior		85,701	0	No Injury
4. Richard Gibbs	Winton		68,775	0	No Injury
5. William Telck	Reliance		68,264	1	68,264
TOTAL ALL OUTSIDE SECTIONS, 1935			417,849	1	417,849
TOTAL ALL OUTSIDE SECTIONS, 1934			382,773	2	191,387
TOTAL ALL SECTIONS, 1935			2,031,034	36	56,418
TOTAL ALL SECTIONS, 1934			1,738,336	30	57,945

August Injuries

WILLIAM ASKEY, *Scot, age 67, pit car loader man, Rock Springs No. 8 Mine, Section No. 6.* Fracture of left leg. Period of disability estimated ten weeks.

William and his partner had shot down a full face of coal. As he was shoveling onto the pit car loader, a chunk of coal rolled down off the pile and struck his left leg. More precaution should be used in keeping the pile trimmed and, no doubt, a good pair of leggings and heavy wool socks would have prevented a fractured leg in this case.

MIKE KALLAS, *Greek, age 42, machine runner, Reliance No. 1 Mine, Section No. 5.* Laceration and contusion of left leg. Period of disability estimated four weeks.

Mike had started to sum the cutting ma-

chine into a pillar when it struck a sulphur, which caused the rear end of the machine to swerve around and catch his leg between machine and Duckbill of conveyor. This accident could have been avoided, had the crew moved the Duckbill towards the other side of the room. It is always better to stand at the back of the machine instead of astraddle of the corner, when summing.

MIKE SEVENIKAR, *Austrian, age 40, machine runner and ratchet man, Hanna No. 4 Mine, Section No. 4.* Fracture and laceration of left thumb. Period of disability 28 days.

Mike was operating the ratchet on a Duckbill when the brake blocks loosened, causing the two handles to come together and strike his thumb. Ratchets in bad order should be reported and repaired before attempting to use them.

Girl Scouts' Trip Through Yellowstone Park

By JEAN BRIGGS

ON ACCOUNT of winning First Prize in the Girl Scouts' First Aid Field Day at Rock Springs on June 11th, the Hanna girls were the guests of The Union Pacific Coal Company on a trip from Hanna to Yellowstone Park.

The happy Girl Scouts left Hanna August 24, 1935, with the Captain of the Scouts, Mrs. Henry Peterson, as chaperone, the bus driver being Warren Kerr. Leaving Hanna in the forenoon, Rawlins was reached in time for lunch. During the afternoon we drove as far as Lander, and, after looking over the town, we had dinner, attended a movie, and called it a day.

Getting up early the next morning, we had breakfast and resumed our journey, going by way of Dubois, where we had lunch, reaching the South entrance of the Park about six P. M. the same evening. We visited the famous Fishing Bridge, where we stayed that night, and felt we had had a wonderful day.

Monday morning, August 26th, we left Fishing Bridge and went out by way of the East entrance as far as Cody, stopping at the famous Shoshone Dam, where we took quite a number of pictures. That night we returned to Fishing Bridge and attended the camp fire lectures which were most interesting.

Tuesday we traveled to Mammoth Hot Springs, stopping at Artist's Point, Inspiration Point, Tower Falls, Upper Falls, Dragon's Mouth and Twin Falls enroute, the view at these places being magnificent. We walked to the Hot Springs before dinner, and then stayed at the Lodge, where we again attended the camp fire lecture, entitled "How the Rangers

Spend the Winter." The slides made it most interesting.

Wednesday we visited the Paint Pots, Morning Glory Pool, Devil's Kitchen and Angel Terrace, on the way to Old Faithful, enjoying this trip greatly. After dinner, we went swimming in the great pool which is supplied with hot water from the geysers. The swimming was most enjoyable until we came to put on our riding boots, which some of the girls were unable to do, and had to walk back carrying them. We had not thought of this contingency when we started swimming, but got back to the Lodge all right.

Thursday morning we went horseback riding to Mystic Falls. We found this part of the day rather strenuous, and spent the rest of the day resting. Thursday night we saw Old Faithful geyser reach what was probably its highest mark. It was a most colorful sight, with the spot-light playing on it.

Friday morning we packed up our baggage and left for Jackson, Wyoming. We were still feeling the effects of our horseback ride, and there seemed to be a great many rough spots in the road, at least that is how we felt. Probably our horseback riding the previous day made us feel the jolting.

We had lunch at Moran and stopped to take some pictures of the Grand Tetons, which are a magnificent sight, and then went on to Jackson, where we had dinner and attended a movie that night.

Leaving Jackson early Saturday morning, we arrived at Rock Springs about 2 P. M. It was a dusty, tired, and happy crowd that arrived at the Park Hotel that afternoon.

We attended a dance at Rock Springs, and left for Hanna about 6 A. M., Sunday morning.

It was a splendid and most enjoyable trip, and we desire to take this opportunity to thank The Union Pacific Coal Company for this trip, and for their very generous arrangements for our comfort and amusement.



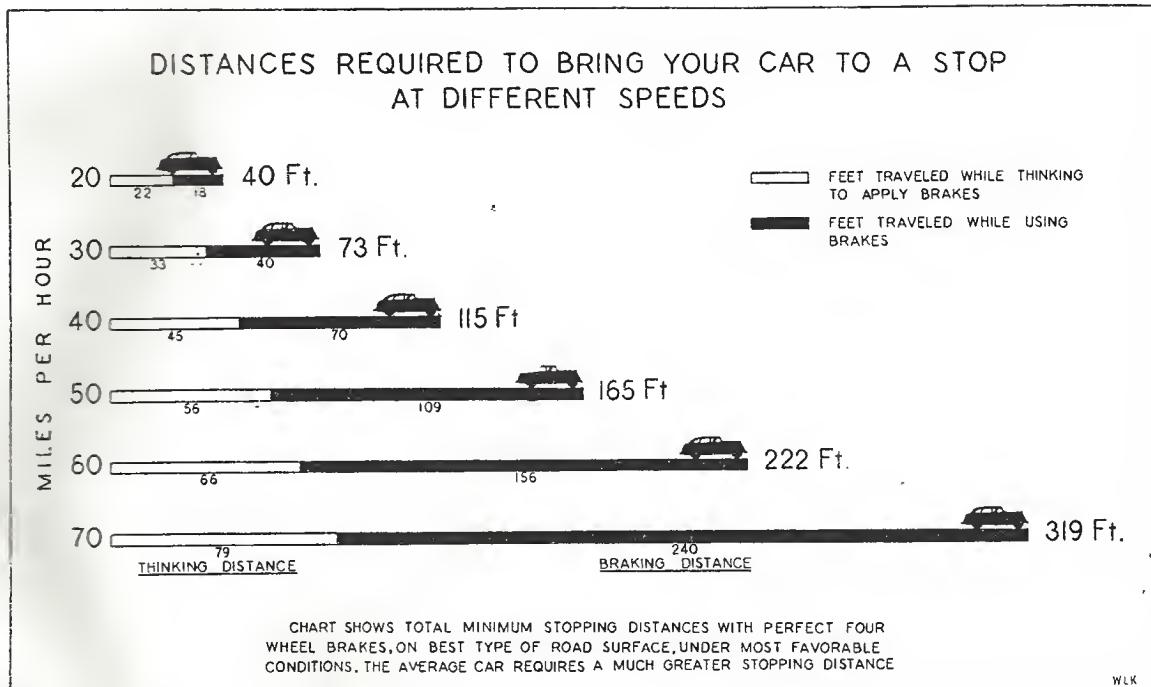
Hanna Girl Scouts who went through Yellowstone Park. Left to right: Jean Briggs, Dorothy Wilde, Clare Lemoine, Helen Briggs and Freda Pickup.

Drive Carefully

ARE HIGH SPEEDS SAFE?

A great deal has been said in recent years that speeds from 60 to 70 miles per hour are safe. There are a great many variables which determine how safe they are—first the driver, second the type and condition of the roadway, third the volume of traffic, fourth the visibility, and fifth the condition of the vehicle.

A car running 60 miles per hour is traveling 88 feet per second. Considering that it requires $\frac{3}{4}$ of a second for the average person to react in



an emergency, the car would travel 66 feet before the brakes would start to take effect. Tests made by various agencies show that under most ideal conditions, using cars equipped with four wheel brakes, it requires a minimum of 222 feet to stop the car. The average car will require a much greater distance. This should be proof that a great many motorists over-drive their ability to stop in an emergency.

When we stop to think of the varying degrees of training, education, intellect and temperament of one and one-half million drivers in Illinois together with the varying mechanical condition of the cars, it seems rather misleading to say that such speeds are safe. We must also consider that the consequences of an accident at such speeds are a great deal more serious than the same type of accident at lower speeds.

Your safety is largely dependent upon the judgment you exercise and your ability to fit your speed to the prevailing conditions. **THINK IT OVER.**

—*Illinois Division of Highways.*

Death by Monoxide Gas

IN THE September issue of The Employes' Magazine, we published a list of thirty-four fatalities occurring to our employees and their families during the eleven years, 1924 to 1934, inclusive.

While the major number of deaths recorded resulted from automobile accidents, two deaths, one in October, 1926, at Rock Springs, and one in September, 1930, at Superior, were due to inhalation

of carbon monoxide gas while working in and about an automobile, the engine running while the garage doors were closed.

During severe weather, automobile drivers undertake to make minor repairs on their cars within the closed garage, forgetful of the fact that carbon monoxide gas, odorless, colorless, and tasteless, will kill without warning.

NEVER REMAIN IN A GARAGE WITH DOORS AND WINDOWS CLOSED, WHILE THE AUTOMOBILE IS RUNNING.

Numerous children have been asphyxiated in closed automobiles where they were left by their parents for a few moments, the engine allowed to run, carbon monoxide gas passing through defective exhaust connections, thence upward through the car floor. Do not leave children, or even adults, in a closed car with the engine running!

New Type of Safety First Trousers

THE Union Pacific Coal Company family will readily recall the visit made us last year by Dr. William Reid, of the Fife Coal Company, Cowdenbeath, Scotland. Dr. Reid went back thoroughly saturated with the doctrine of mine safety. From "The Colliery Guardian," issue of August 23, 1935, we abstract the following note on a new type of safety first trousers:

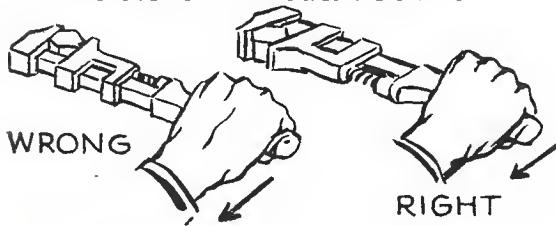
"The Fife Coal Company are supplying to the miners a new type of safety-first trousers which, it is claimed, will prevent damage to

the miners' knees. The trousers are made of strong cloth with pockets covering the knees, which open and shut by means of a zip fastener, in which is inserted a rubber pad or sponge. The present method of protecting the knees by means of leather pads strapped round the outside of the trousers, it is stated, prevents the free use of the legs, and after a short period is very uncomfortable to the wearer."

While the necessity for protection to the worker's knees is not important when working in coal seams of reasonable height, knee protection becomes a very vital matter where men are compelled to work on their knees in thin seams. Some substantial form of ankle protection would add very materially to the safety of mine workers, particularly those working in pitching seams, where coal is prone to roll.

Use of Wrenches

USE OF WRENCHES



The misuse of wrenches has caused many a skinned knuckle, mashed finger, strained back and serious fall. The ways of preventing these injuries are so simple and so easy to apply that it is a wonder so many occur.

Here are some of the ways to avoid injury:

1. Use wrenches that are the proper kind and size for the job.
2. Use only wrenches having jaws in good condition.
3. Never use a shim to make the wrong size wrench fit the nut.
4. Do not use a wrench as a hammer. It weakens it.
5. Always place the wrench on the nut in such a position that the pull on the handle tends to force the jaws further onto the nut.
6. Think twice, before you push on a wrench. Ten chances to one, you will find it safer to pull.
7. See that your footing is good before you pull. Get the habit of figuring out what is going to take place if the wrench slips, the bolt breaks or the threads slip.
8. Keep the jaws of pipe wrenches sharp.
9. Never use a piece of pipe to extend the wrench handle for leverage.

Frederick: "Is a tooth an organ of my body?"
Doc Jones: "Sure, grind organ."

With the Explorers

The explorers are manoeuvering about these days framing plans for the coming winter.

Mr. Lincoln Ellsworth, at his summer home in Switzerland the past few months, has departed thence by Zeppelin for South America. He has in contemplation a flight across Antarctica from Weddell Sea to Ross Sea, providing, of course, the weather is propitious. Last year he waited forty-four days for a suitable 12-hour stretch in which to make this 2,300 mile journey with his low-wing plane. His vessel, the WYATT EARP, is now being outfitted at Montevideo and he expects to sail from that port October 20th.

Captain "Bob" Bartlett, with his schooner "Effie Morrissey", crew and a number of University students, lately visited Cape York, upon whose summit stands the monument to the late explorer, Commander Robert W. Peary, erected by the United States Government several years ago.

Rev. Bernard Hubbard, known as the "Glacier Priest," sailed from Victoria, B. C., recently to make studies concerning the depths of ice caps. He was accompanied by companions of former expeditions.

Martin Johnson and his wife (Osa), intrepid explorers, sailed on a Dutch freighter August 13 from Brooklyn, taking with them their Sikorsky amphibian plane, hoping to make valuable geographic discoveries in interior Borneo.

On July 24th last, Dr. Dana Coman, of Johns Hopkins University, Baltimore, left Honolulu on the schooner Kinkajou at the head of a party to study the marine life, vegetation, etc., of Baker, Howland and Jarvis Islands, United States Equatorial possessions, these lying some 1,500 miles south of Hawaii. The Department of Commerce has had these tracts under survey since March of this year with a view to their being probable stops on a proposed air line linking the United States with Australia. Landing at Baker Island, they were greeted by four Hawaiian youths from Honolulu who had been serving the Government in making meteorological observations the greater part of 1935. Two men from Dr. Coman's expedition remained on Baker Island with necessary camp and research equipment, intending to stay there several months to study landing and colonizing possibilities, gathering data on natural resources, etc., the Doctor reporting Baker Island will make an ideal link in the chain. Upon reaching Howland Island, it was planned to also leave two men to carry on similar research work, surveys, etc.

The Fourth Centenary of the English Bible

OCTOBER 4, 1535, four hundred years ago, the first complete Bible, translated into English, was given to the world. All Christendom will unite in celebrating this great anniversary, on October 4, 1935.

The first person to attempt to give the world an English Bible was John Wycliffe, who died a hundred years before Martin Luther was born. Wycliffe was a native of Yorkshire, England, born in 1320, dying in 1384. Wycliffe undertook to translate his Bible from the Latin Vulgate, the celebrated translation of Jerome made from the Hebrew and the Greek in the fourth century. Wycliffe finished his translation of the new Testament, dying before the completion of the Old Testament.

In 1492, the year in which Columbus made his great discovery of America, William Tyndale was born in Gloucestershire, England. Between the death of Wycliffe and the coming of Tyndale, printing was invented, the Reformation was under way, and Luther had given a Bible to the German people in their language. Tyndale set himself to the task of translating the New Testament into English, which, when completed, was published in Holland. On October 6, 1536, Tyndale was strangled and his body burned to ashes in the state prison, six miles from Brussels, Belgium.

In 1535, what is known as the Coverdale Bible, the first printed edition of the entire scriptures in the English language, was gotten out in Zurich, Switzerland, and given to the world. In 1537, a Bible known as the Matthews Bible was published in England, and this book, largely taken from Tyndale's translation, was the first Bible to be printed in England. Other editions followed. "The Great Bible" or "Cranmer's," published in London in 1539, the "Taverner's Bible" came out in England in 1539, the "Genevan" in 1560, the "Bishop's Bible" in 1568, and the "Rheims and Douay," the work of Roman Catholic translators, came out in 1582. The "Douay Bible," named from the city in northern France, where the Old Testament was published in 1609-10, has been a fountain of spiritual knowledge to millions of English speaking Catholic households for three hundred years.

As the Douay version is the choice of Roman Catholic readers, the "Authorized" or "King James" version, first published in 1611, is the standard version used by the Protestant Christian world. When one enters Trinity Church at Stratford-on-Avon, where William Shakespeare is buried, there will be seen a first edition of the King James version of the book chained to the wall with a very old chain. This book is known as the "Chain Bible" and Shakespeare must have drawn upon it for the many Biblical quotations and illustrations written into his work.

The New York Times recently said of the forthcoming fourth centenary celebration:

"On October 4, 1935, there came from the press the final sheets of the first printed English Bible. The completion of the four hundred years in which this book in its successive translations has molded the life and thought of the English-speaking people of the world is to be made an occasion for a nation-wide expression of gratitude to God for this gift and for a new and concerted effort to bring the people of America 'into vital touch with its matchless resources.'

"The Bible has surpassed in circulation any other book in the world and has been the indispensable guide and companion of millions of persons in every degree and walk of life. The Pilgrims brought out of England the Bible when the King James version was only nine years old. Knowing this book of books, they were not uneducated. It was Webster's speech at Bunker Hill which reminded their descendants that it 'teaches man his own individual responsibility, his own dignity and his equality with his fellow-men,' lessons never more needed than today."

To attempt to determine the number of Bibles published annually would be an impossible task. The American Bible Society alone published a total of 10,034,797 Bibles, Testaments and Portions, in 1927, and the number has grown since then. In the capital at Washington, is a painting some twenty feet square, representing the landing of the Pilgrim Fathers at Plymouth Rock, Massachusetts, in 1620. One of the most conspicuous features of this painting is an open Bible.

In 1904, there was printed and bound by photolithographic process, 9,000 copies of Thomas Jefferson's "The Life and Morals of Jesus of Nazareth," true reproductions of the original reposing in the National Museum at Washington. Through the kindness of a dear friend, we came into possession of a copy of this book some years ago.

Under date of January 29, 1815, Jefferson wrote, from Monticello, to Charles Clay:

"Probably you have heard me say I had taken the four Evangelists, had cut out from them every text they had recorded of the moral precepts of Jesus, and arranged them in a certain order, and although they appeared but as fragments, yet fragments of the most sublime edifice of morality which has ever been exhibited to man."

The four Gospels as clipped, pasted, and marginally indexed by Jefferson, were arranged in parallel columns, Greek, Latin, French, and English. Thomas Jefferson, while President of the United States, wrote in 1803 to Dr. Benjamin Rush of Philadelphia, the words that follow, bearing on

page	A Table
of the Texts of the Scriptures from the Evangelists, and of the order of their arrangement.	
1.	Luke 2. 1-7 Joseph & Mary go to Bethlehem where Jesus is born 2. 39, he is circumcised & named. & they return to Nazareth. 10. 42-48. 51-52. at 12 years of age he accompanies his parents to Jerusalem and returns.
2.	L. 3. 1-2. Mt. 1. 1-3. 4. 5-6. John baptises in Jordan. Mt. 3. 12. Jesus is baptised. L. 3. 23. at 30 years of age.
3.	J. 2. 12-16. drives the traders out of the temple. J. 3. 22. Mt. 4. 12. Mt. 6. 17-28. he goes into Galilee on the Haddath of Jordan.
4.	Mt. 5. 1-21. 22. he teaches in the Synagogue.
5.	Mt. 12. 1-5. 9-12. Mt. 2. 27. Mt. 12. 14-15. explains the Sabbath. L. 6. 12-17. call of his disciples.
6.	Mt. 5. 12-14. L. 6. 24-25. 26. Mt. 5. 13-17. L. 6. 32. 35. 36. Mt. 6. 1-3. 7.
7.	L. 6. 30. Mt. 3. 20. 12. 35-36. 37. 7. 24-29. The Sermon in the Mount. Mt. 8. 1. Mt. 6. 6. Mt. 11. 28-29. 30. exhorts.
8.	L. 7. 36-46. a woman anoints him. Mt. 21. 35. L. 12. 1-7. precepts
9.	L. 12. 16-21. parable of the rich man. L. 13. 1-5. precepts
10.	L. 13. 6-9. parable of the figtree. L. 11. 37-46. 52. 53. 54. precepts.
11.	Mt. 13. 1-9. Mt. 4. 10. Mt. 13. 18-23. parable of the Sower. Mt. 4. 21. 22. 23. precepts. Mt. 13. 24-30. 36-52. parable of the Tares.
12.	Mt. 4. 26-34. L. 9. 57-62. L. 5. 27-29. Mt. 2. 15-17. precepts. L. 5. 36-39. parable of new wine in old bottles.
13.	Mt. 13. 53-52. a prophet hath no honor in his own country. Mt. 9. 36. Mt. 6. 7. Mt. 10. 5-6. 9-10. 22-26. 31. Mt. 6. 12-20. Mt. 10. 34-39. 40-43. 45-47. 50-52. 55-57. 59-61. 63-65. 67-69. 71-73. 75-77. 79-81. 83-85. 87-89. 91-93. 95-97. 99-101. 103-105. 107-109. 111-113. 115-117. 119-121. 123-125. 127-129. 131-133. 135-137. 139-141. 143-145. 147-149. 151-153. 155-157. 159-161. 163-165. 167-169. 171-173. 175-177. 179-181. 183-185. 187-189. 191-193. 195-197. 199-201. 203-205. 207-209. 211-213. 215-217. 219-221. 223-225. 227-229. 231-233. 235-237. 239-241. 243-245. 247-249. 251-253. 255-257. 259-261. 263-265. 267-269. 271-273. 275-277. 279-281. 283-285. 287-289. 291-293. 295-297. 299-301. 303-305. 307-309. 311-313. 315-317. 319-321. 323-325. 327-329. 331-333. 335-337. 339-341. 343-345. 347-349. 351-353. 355-357. 359-361. 363-365. 367-369. 371-373. 375-377. 379-381. 383-385. 387-389. 391-393. 395-397. 399-401. 403-405. 407-409. 411-413. 415-417. 419-421. 423-425. 427-429. 431-433. 435-437. 439-441. 443-445. 447-449. 451-453. 455-457. 459-461. 463-465. 467-469. 471-473. 475-477. 479-481. 483-485. 487-489. 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Engineering Department

The Rock Springs Uplift—A Potential Oil and Gas Structure

Data Collected by C. E. SWANN

ARTICLE NO. 17 OF A SERIES ON GEOLOGY PART II

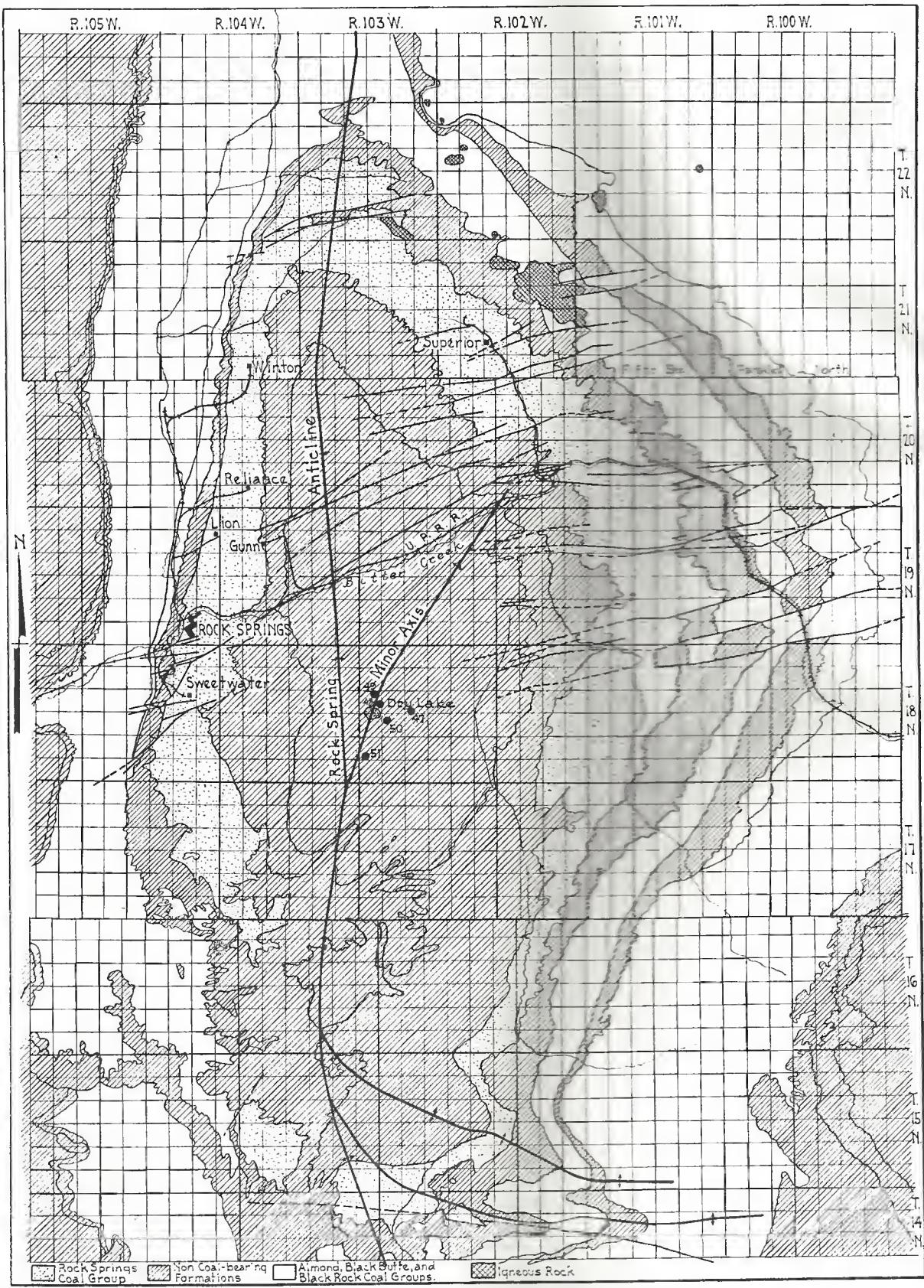
THE early structural contours were drawn on the upper surface of the highest sandstone lentil of the Baxter formation, because this stratum was mapped in the field over considerable area in the basin, at the time the Government was making detail examinations of the coal deposits surrounding the Rock Springs Uplift, and represents one of the lowest beds that is well exposed and sufficiently characteristic lithologically to be identifiable in different parts of the field. This shaly sandstone, because of its lithologic similarity, is believed to represent approximately the horizon of the Shannon sandstone member of the Salt Creek field, in which the upper oil occurs. The base of the Rock Springs coal is another important key rock above the datum surface and was used in early investigations in part of the field in determining the position of the structure contours on the sandstone. As the interval between these two key beds is not everywhere the same, considerable error may have been introduced wherever it was necessary to use the base of the coal group as a level from which to calculate the position of the datum surface. Minor irregularities undoubtedly are present in the fold, but without a mass of drilling records and much detailed geological work an accurate structural contour map cannot be made, although the early approximate structural contour maps were very useful in later geological work.

Faults play an important part in the location of possible oil pools along the uplift. The great Uinta fault, along the north side of the Uinta Range, as well as the Red Creek syncline, no doubt separates the greater part of the Uinta anticline from the Rock Springs dome, whose major axis is nearly at right angles to that of the Uinta fold. This fault has completely sealed the south end of the Rock Springs dome, so that the oil has not escaped in this direction. The structural relation of the older rocks at the junction of these two folds is entirely concealed by Tertiary beds and can only be inferred from the structure ascertained at more distant points on the folds. The two folds are closely related structurally, however, and the faulting observed elsewhere in the Uinta Range is equally well represented, although on a somewhat smaller scale, in the Rock Springs region.

The general structure of the Rock Springs arch is somewhat complicated by many normal faults of considerable throw. Here and there the horizontal displacement along the fault line amounts to three miles; the vertical movement is usually less than 100 feet but in a few localities reaches several hundred feet. Near the south end of the Rock Springs dome, in Township 14 North, Range 103 West, along the crest and south limb of a low anticline that is more nearly parallel to the Uinta uplift, is an overthrust fault which has a vertical displacement of 200 feet. The fault plane dips about 20 degrees to the south, indicating that the thrust came from that direction.

The sandstone ridges that surround Baxter Basin are cut by a number of dip faults, particularly along the eastern and western borders of the arch, and at some places, as in the vicinity of the Union Pacific Railroad, these faults may be continuous across the dome. Whether or not these displacements cut the Frontier or other sandstones near the base of the Colorado group cannot be stated positively, but they are probably all taken up in the shale above the Frontier sandstones, or, if continuous, they may make only slight flexures in the sandstones near the base of the Colorado group. Along some of these fault planes in the Baxter Shale, notably north of the Union Pacific Railroad northeast of Baxter station, the position of the fault is marked by small, low dikes or veinlike deposits of calcite that stand several inches to a foot above the decomposed shale. Where the dike or vein material, which is from half an inch to 12 inches in thickness, does not rise above the surface the line of the fault can be traced by the fragments of calcite strewn along it. Two of the fault contacts where a vein deposit of this type can best be studied lie approximately 3 and 4 miles north of Baxter. The material may readily be picked up along the fault in Section 1, Township 19 North, Range 103 West, in Section 6, Township 19 North, Range 104 West, and in Section 36, Township 20 North, Range 104 West. The appearance of some of this calcite, filling fissures along fault planes, is well shown in several localities.

These dikes, or veins of calcite, as well as the fragments strewn along the surface, represent vein deposits of calcite that fill or partly fill the fissures produced by faulting. Careful search was made along some of these dikes to ascertain whether or not ozokerite, or mineral wax, was associated with the calcite, but none was found. Certain of the faults in the shale may extend down to a sand in which oil may be stored and afford passages



GEOLOGY MAP OF THE ROCK SPRINGS COAL FIELD

through which oil in the sand under great pressure may be forced upward to the surface. If the faults do not cut an oil sand or if the fissures are completely recemented with calcite or other material, so that the oil could not reach the surface, no ozokerite would be found associated with the vein deposit.

The ozokerite that in some fields is associated with the calcite which fills all fault fissures at the surface is produced by the evaporation of oil which has risen in these fissures and long remained there. It is noteworthy that most deposits of ozokerite in calcite veins appear to be confined to the area immediately above the oil pool and are not found in the adjoining areas, perhaps because the gas pressure immediately over the oil pool is the greatest and the oil is forced close to the surface, whereas at greater distances from the pool the pressure is not so great and the oil is not forced upward to produce seepages and deposits of mineral wax. The absence of mineral wax in calcite veins does not prove the absence of oil in a fold; it may indicate that the fissures or veins do not cut an oil sand or that the oil pool lies in some other part of the fold not cut by faults.

In the Rock Springs region some of the faults extend across the dome, others cut one limb or part of one limb, and still others extend for a few hundred feet or a mile or two and then die out. Some of the larger faults have been traced for more than 20 miles. The general trend of the faults is nearly at right angles to the strike of the rocks, or across the major axis of the dome. In some places, however, the angle of departure is large and the fault more nearly parallels the strike than the dip of the beds. This is well illustrated near the north end of the dome, where the faults cut some of the rocks at right angles to their strike but before dying out continue approximately along the strike of the underlying beds. The position of the larger faults is shown on map. In addition to the larger faults that are readily detected on the surface, numerous small faults are encountered in coal mine workings, and similar faults no doubt are also present in the shale areas. In the Rock Springs coal group, from the Van Dyke, or lowest coal bed worked in the Rock Springs district, upward, there is at many places a system of characteristic joints or slips that cut the coal at short intervals from floor to roof. These slips incline towards the south, and along many of them the displacement is half an inch to a foot or more. The exact period of the faulting is not known. It may have occurred at different times during the gradual uplift of the dome, after the end of the epoch of Cretaceous deposition. It is believed, however, that most if not all of the faulting in the Rock Springs area occurred at the time the leucite lava flows at its north end were poured out and was associated with the movements that gave rise to the renewed uplift in the Uinta Mountains immediately before the period

of deposition of the Bishop conglomerate, which, so far as known, is nearly independent of the faults and folds in the underlying rocks and is either of Bridger or post-Bridger age. Both minor folding and faulting, however, have taken place in different parts of the field since the deposition of the Bridger formation.

Oil Bearing Formations Probably Present Beneath Baxter Basin—General Features—In the fields surrounding the Rock Springs region in Wyoming, Colorado and Utah, some of the formations from the Cambrian to the Cretaceous contain sandstone members or strata which in places contain traces of oil or produce oil and gas. These formations may, therefore, contain oil or gas in the Rock Springs field. The lowest of these favorable oil sands or prospective oil reservoirs are more than 5,000 feet below the surface in Baxter Basin, and some of them lie too deep for commercial exploitation and are of interest only as possible sources of oil to supply the overlying sands that lie near enough to the surface to be within practicable reach of the drill. That some of the shales associated with the sandstones contain oil pools is not considered probable, although it is recognized that oil in small quantities may be present in shale here as it is in some of the other Rocky Mountain fields. Its commercial importance, however, is negligible.

Fears No Oil Shortage

W. E. Pratt of Humble Co. Notes Need of Conservation, Though

A SHORTAGE of crude oil is not in sight, according to Wallace E. Pratt, vice president of the Humble Oil and Refining Company, a subsidiary of the Standard Oil Company of New Jersey, in the current issue of *The Lamp*. He says that of the world's total past oil production of 26,500,000,000 barrels, roughly two-thirds, or nearly 17,000,000,000 barrels, have come from the United States. Of the proved reserves of oil in the world today, amounting to somewhat less than 25,000,000,000 barrels, he estimates that approximately one-half is within the United States.

"As to the volume of the total petroleum reserves of the world," Mr. Pratt continues, "including past production, proved reserves and oil yet to be discovered, no one, perhaps, would have the temerity to hazard a guess. However, no informed student of the problem doubts that the total ultimate oil resources in the rest of the world greatly exceed those of the United States, whether or not the rest of the world ever exploits their resources as exhaustively as the United States seems likely to do.

"Most competent observers, no doubt, would estimate the total oil resources of the rest of the world to have been originally at least twice as large as those of the United States; many would believe

that the preponderance of foreign total resources is even greater than this ratio indicates.

DEPTH OF WELLS INCREASED

"In recent years the oil-producing industry has increased the maximum depth to which it can drill from 6,000 or 7,000 feet to 10,000 or 11,000 feet. At the moment a well is drilling in Texas at a depth of more than 12,000 feet, the deepest well in the world. But over much of the United States there is no occasion to drill so deep in search of oil. Very generally throughout this country a depth of 10,000 feet carries the drill into rocks so dense that no oil deposit can exist in them.

"Average annual discoveries increased rather regularly from 1859 to 1925, but the next half decade, 1926 to 1930, showed a tremendous increase—more than double the highest previous annual average—and the final four years, 1931-1934, showed an equally sharp decline to a figure lower than any other average year since the 1911-1915 period.

"Our highest discovery rate over a five-year period has been nearly 2,000,000,000 barrels a year; over a ten-year period, 1,400,000,000 barrels a year. Over the last four years our average rate has been only 580,000,000 barrels a year. During the five-year period of our highest discovery rate (1926-1930) the industry found more than one-third of all the oil it has ever found and nearly all of its present major fields, including Yates, Kettleman Hills, Oklahoma City, East Texas and Conroe.

"At some time in the future, whether it be remote or proximate, oil finding in the United States will begin to lag seriously behind consumption. When that time comes the American manufacturer of liquid fuels and lubricants will begin to supplement the supply of raw material he has previously obtained from the oil producer in the United States with an increasing proportion of imported crude, provided oil for import be then available.

SUBSTITUTION POSSIBLE IN FUTURE

"Whenever the required supply is no longer to be obtained at reasonable prices from domestic production plus imports, the manufacturer will turn to substitute raw materials.

"Coal is the most likely substitute and fortunately the reserves of coal within the United States are ample for our needs over as long a period as we should attempt now to plan. The change to coal as a substitute for oil will not be a sudden, disrupting change. It will take place gradually and it will take place before prices of products advance far enough to give the consumer serious concern.

"Nevertheless, gasoline from coal will cost more than gasoline from crude oil, and this circumstance, together with the disadvantage to the United States which would arise if it were forced to the use of substitutes at a time when the rest of the world still had ample reserves of crude oil, constitute the basis upon which the plea for conservation of crude oil reserves rests."

The Black Widow Spider

THE sudden appearance of the spider, known as the "Black Widow", throughout the United States, has caused state and federal health officers very material concern, a number of fatalities and a much greater number of non-fatal injuries sustained by contact with this spider.

We are submitting herewith a very complete resume of the insect, its appearance, habits, and symptoms suffered from its bites, as well as treatment and protection against bites.

IDENTIFICATION

The black widow spider is a cool black shiny spider with a small head and a large smooth abdomen about the size of a large pea. It derives its name from the female's habit of killing and eating the male after mating. The spider is also known as the "hour glass" and the "shoe button" spider. The legs are long and sprawling. The females measure from one to one and one quarter inches in length over all, while the males are less than an inch in length.

The abdomen of the female spider is marked on the under side with brilliant red or brick red triangular spots. These spots vary in arrangement. Often two of these touch base to apex or apex to apex, similar to an hour glass in outline, or there may be four spots roughly arranged like a maltese cross. In some cases only one spot may be seen. The males and immature females are variously striped and spotted with lighter markings than the adult females.

The egg cocoons are spun during the summer and are well protected by the web and are carefully guarded by the female. Each egg cocoon contains approximately three hundred rather large eggs. The incubation period is about thirty days.

The young spiders are gray, quite unlike the adults and are very active, attacking plant lice at once. Through a series of moults the young spiders gradually become darker, showing creamy white lines or spots dorsally on the abdomen, the ventral red markings appearing within a month. Growth of the young spiders is very rapid during the rest of the summer and autumn, but maturity is not reached until the following spring or early summer.

WHERE FOUND

The black widow is found throughout the United States, being more common in the southern states. It lives under logs and stones and in cracks and crevices, in outbuildings and basements, particularly in old barns, stables, etc. It may also be found in woodpiles, and under low wooden and concrete bridges, culverts, etc. It spins a rough web in which it catches its prey, mainly flies and other insects.

EXTERMINATION

"Black Widow" spiders may be largely, if not entirely, eliminated by:

A. Cleaning out and keeping clean all places where spiders are likely to be found.

B. Killing all spiders with boiling water or by spraying with insect spray. This smothers the spiders.

C. Destroying all spider webs and eggs.

TOXICITY AND VENOM

Reports of the Bureau of Medicine and Surgery, United States Navy Department, the Oklahoma Agricultural and Mechanical College, and various oil companies show beyond doubt that the venom of the female spider is extremely poisonous, sometimes fatal. Data available indicates that while the bite of the male spider may produce intense pain and irritation, it is the bite of the female that produces serious results. The female is a vicious fighter, but she fights only for food or when her domain is invaded.

SYMPTOMS OF BITE

The sensation of the bite has been likened by some victims to that of a bee or wasp sting; by others to a briar scratch, the sudden extraction of a hair or pin prick. Immediately after the bite there may appear a small red spot, or a small swelling, on the apex of which will be found a puncture wound the size of a pin head. Immediately following these sensations, there may be some itching or burning. Sometimes the patient may not know he has been bitten until the general symptoms appear from ten minutes to several hours later. The general symptoms as given by various authorities vary somewhat in detail, but in substance are:

A. Sharp, severe, burning pain which increases rapidly until it becomes almost unbearable.

B. Intense pain followed by rigidity or toxic spasm of muscles, markedly of abdominal muscles.

C. Depressed and retarded heart action, small weak pulse, sub-normal temperature, cold extremities and in some cases profuse cold perspiration.

D. In some cases, great nervousness and mental depression.

TREATMENT OF BITES

Preliminary treatment recommended is:

A. Apply tourniquet above bite if possible.

B. Wash wound thoroughly with strong soap suds.

C. Apply sterile compress saturated with ammonia water or a solution of sodium bicarbonate (Baking Soda).

D. Send for doctor immediately.

No time should be lost in securing the services of a physician even though a preliminary treatment has been made.

PROTECTION AGAINST BITES

Workmen should wear heavy gloves when working in places where the spider may be found.

Bars should be used to pry down old material and the material should be inspected for spiders before it is handled.

Workers should not take off their gloves while handling old material.

If gloves are placed on the ground by the worker, he should turn them inside out before putting them back on again, as spiders may have crawled into the fingers of the glove.

A little care and watchfulness on the part of each employe should eliminate an accident from this particular hazard.

Coal Here, There and Everywhere

The Fushun Collieries of Manchukuo are operating in a vein of coal 420 feet thick in places, the vein averaging 120 feet. This is open pit work.

The Canadian Pacific Railway recently completed the sinking of two large new shafts near Lethbridge, Alberta, the proposed mine to be electrically equipped.

In coal mines throughout Canada (and they are far apart—Nova Scotia to Alberta) more complete mechanization is gradually being brought about. More careful preparation to meet the market needs is also receiving careful attention.

Coal deposits have lately been found in the Kapuskasing area of northern Ontario and the claims staked out by prospectors, the development to be carried out by a coal mining syndicate. Canadian Government tests show it is a high volatile bituminous with low moisture. This discovery is the first of such importance yet made in the Province of Ontario. Report says the coal field is conveniently located in its relation to transportation facilities. The coal located is 700 to 800 miles northwest of Toronto, not far from Hudson Bay.

Strip mining operations in the Sheerness area of Alberta, Canada, are being extended.

The one-hundredth anniversary of the Thornley, Durham County, England, coal trade was celebrated in June. The Hartlepool docks from which the coal was exported were opened at the same time.

At the Tata Colliery, the largest operation in Hungary, four men died from injuries received while fighting a fire in July.

The U. S. Bureau of Mines has announced its plans to study methods of extracting motor fuel from coal in anticipation of the day when our reserves of petroleum shall begin to decline. This and other research work in connection with coal is made possible by an added appropriation of \$600,000 by Congress.

» » » Ye Old Timers « « «

Old No. 1 Mine Rock Springs



The accompanying snap-shot taken in April, 1896, shows old Mine No. 1 tipple at Rock Springs. In that year, the mine produced 365,495 tons of coal, worked 226 days, with an average of 452 monthly employees. David G. Jones was Foreman; George L. Black, Assistant Superintendent, and Thomas Brenaman, Outside Foreman. This mine was closed down July 22, 1910.

Obituaries

J. STANLEY PREECE

J. Stanley Preece, Engineer in the Rock Springs Power Plant, died at the Wyoming General Hos-

pital on the morning of September 7, from an acute attack of appendicitis, for which he had been operated upon a few days previously.

Mr. Preece was born in England on July 2, 1894, and accompanied by his parents, came to this state in 1908, in which year he was employed in old Mine No. 1 here, re-



J. Stanley Preece

maining there until the mine was abandoned in 1910, entering the employ at that time of the Union Pacific Railroad at its local round house, also serving for a short period in the ticket office here, returning to the service of the Coal Company in its power plant in 1920, being steadily in its service since that date.

He married Anna M. Thomas (daughter of Mr. and Mrs. Hugh Thomas) in April, 1919, and she and two children survive.

Mr. Preece was elected President of the Old Timers Association at its 8th Annual Reunion, devoted much time to Scout affairs in past years, and was also an ardent disciple of Izaak Walton, being connected for several years with the local organization of fishermen and game hunters. He had always taken an active interest in Community Club affairs and did not stint with his time or energies in furthering same.

The funeral was conducted from the Rogan Funeral Chapel on Tuesday, September 10th, Rev. John R. George officiating. interment in Mountain View Cemetery here. The sympathy of the Community goes out to the bereaved family.

MRS. IDA HUHTALA

The community of Hanna was saddened by the removal from its midst of an Old Timer when Mrs. Ida Huhtala passed away on Friday, Sept. 6. Though she had been ill for some time and unable to get around very much, she was always cheerful and will be very greatly missed by her family and many friends.

Mrs. Huhtala was born in Finland November 16, 1867. She came to Carbon, Wyo., in June, 1888, and was married to Matt Huhtala on July 5th of the same year. After living in Carbon for a few years they moved to Washington state. They returned to Wyoming, living in Almy for a time, after which

they came to Hanna, where Mrs. Huhtala had resided for 43 years. Mr. Huhtala had predeceased

(Continued on page 411)



Mrs. Ida Huhtala

» » Of Interest to Women « «

Choice Recipes

BAVARIAN CREAM

- 1 1/2 lemon, grated rind and juice
- 1 1/2 cup of white wine
- 1 1/3 cup sugar
- 2 eggs
- 1 teaspoon granulated gelatin
- 1 tablespoon cold water

Mix lemon wine, sugar, and yolks of eggs, stir vigorously over fire until mixture thickens, add gelatin soaked in water, then pour over whites of eggs beaten stiff. Set in pan of ice water and beat until thick enough to hold its shape. Turn into a mold and chill. Serve garnished with whipped cream and cherries.

ANGEL SALAD

- 1 large can sliced pineapple (cut fine)
- 1 large can white Royal Ann cherries
- $\frac{1}{4}$ lb. marshmallows (cut fine)
- $\frac{1}{4}$ lb. blanched almonds (cut fine)
- 1 pt. whipped cream

Cut fruit and drain in a colander overnight. Add nuts and marshmallows. Add cold dressing, and fold in whipped cream. Set in refrigerator 12 to 14 hours.

CHEESE SOUFFLE

3 tsp. Minute tapioca
1 cup scalded milk
1 cup grated American cheese
3 eggs

Cook tapioca and milk together until tapioca is transparent. Add grated cheese. Stir well until melted. Add three egg yolks, well beaten. Fold in egg whites, stiffly beaten. Put in buttered pan and place in a pan of hot water. Bake slowly 50 minutes. Serves 6.

*All measurements are level.
Recipes proportioned for four.*

Hot Potato Salad

6 slices of bacon diced	1 tablespoon	s w c e t
1 quart warm boiled		pickle relish
potatoes, diced small	3 tablespoons	vinegar
1 small onion, minced	Salt	Pepper
	Chopped parsley	

Fry the bacon until crisp and brown, drain, and reserve the fat. Combine the bacon, potatoes, onion, and pickle relish. Add the vinegar to the bacon fat and pour over the potatoes. Season to taste with salt

and pepper, mix until blended, and serve sprinkled with chopped parsley.

Goulash

3/4 pound lean beef	3 tablespoons drippings
3/4 pound lean veal	1 large onion, diced
1/4 cup flour	2 stalks celery, diced
1 teaspoon salt	1 cup sieved canned
1 teaspoon paprika	tomatoes

Cut the meat in rather large dice. Combine the flour, salt and paprika, and roll the meat in the mixture. Melt the drippings, add the meat, the onion, and celery, and saute until browned. Pour off any excess fat, and add the tomatoes. Cover closely and cook over a low heat for one hour, or until the meat is tender. Serve on and with parsleyed noodles.

For Next Winter's Pantry Shelf

How good they smell—spicy apple butter, peach jam, mustard pickle, chili sauce. Children are following their noses straight to the kitchen when they come in from play; father asks what smells so good when he comes home from work and everyone wants a taste despite the cook's assurance that such things should ripen in the jars before they are ready for the table.

While it is no longer necessary to do home canning, because of the long list of commercially packed goods carried by every grocery store, nearly every homemaker puts up at least one favorite in the fall which she may save for very special occasions or send as a gift to special friends. Many women can their own tomato juice and season it just the way they like it so that it is only necessary to chill before serving. It is convenient to have tomato sauce canned and ready to heat for spaghetti, veal chops, croquettes or casserole dishes. Here is a tomato sauce recipe which will be its own reward for the trouble of canning it. It is given here in a family size quantity, but can be multiplied as many times as desired for canning in quantity.

TOMATO SAUCE—4 tablespoonfuls of olive oil, $\frac{1}{2}$ teaspoon black pepper, 1 small onion (chopped), 3 tablespoons tomato paste, $\frac{1}{2}$ cup water, 1 quart tomatoes, 1 bay leaf, 1 teaspoon salt, 1 tablespoon sugar. Heat olive oil and pepper until oil smokes. Add onion and cook until soft, being careful not to brown. Mix tomato paste with water and add to the oil in three installments, letting it cook each time until it looks dry. Add tomatoes, bay leaf and salt and cook until one-third of the

sauce has evaporated. Add the sugar and cook ten minutes longer.

PEACH BUTTER—Peel and stone peaches. Cook in as small amount of water as possible until they are reduced to a pulp. Add one-half as much sugar as peach pulp and cook until thick and clear, stirring to prevent burning. Pack into clean, hot jars and seal at once.

CIDER APPLE BUTTER—Purchase boiled cider or boil cider down one-half. Wash, peel, quarter and core apples. Boil together equal amounts of cider and apples for about two hours, stirring to prevent burning. Add sugar and spices to taste and boil until thick and perfectly smooth. Seal in clean, hot jars.

CHILI SAUCE—4 quarts chopped and peeled tomatoes. 2 cups chopped onions, 1 cup chopped sweet, red pepper, 1 cup chopped green pepper, 1 small hot, red pepper; 3 tablespoons salt, $\frac{1}{2}$ cup sugar, $2\frac{1}{2}$ cups vinegar, 1 tablespoon white mustard seed, 1 teaspoon cinnamon, 1 teaspoon all-spice. Combine the vegetables, salt and sugar, and cook until the mixture begins to thicken, then add the vinegar and spices, and cook until the mixture becomes a thick sauce. Pour into hot jars and seal immediately.

A Delicious Milk Dessert

ORANGE JUNKET WITH APPLE WHIP

One package orange junket powder; 1 pint milk; 1 tablespoon sugar, $\frac{1}{4}$ cup thick apple sauce; white of 1 egg.

Prepare orange junket according to directions on package. Chill in refrigerator. When ready to serve, beat egg white until stiff. Add apple sauce and sugar. Beat well, and put on top of the junket.

Mealtime for Children

Never force a child to eat what he does not want, writes a child specialist. If he dislikes the menu, tell him to eat bread and butter instead. He must not, of course, have anything until the next meal time. Try to find out the foods the family like, and supply those without comment.

Don't talk about food. Serve it and take no apparent notice of whether it is appreciated or not. Don't waste energy coaxing or even asking children to eat their dinner. Give a reasonable time for them to do so, and then clear their plates for the next course.

Try to vary your menus so that you do not repeat the same dish more than once in three weeks. There are only a few edible animals, it is true, but hot boiled ham, hot cooked tongue, rabbit pie, mixed grill, liver, fish and cheese, or fish with eggs and tomatoes, stuffed heart with really fine soups such as broth, add variety to the everlasting roast beef or mutton, stews and chops. At

least once a fortnight poultry should be supplied.

Variety combined with palatability as a food feature is one test of a housewife endowed with talent and efficiency.

World Wide Activities of Women

The women's division of the architect emergency committee in New York city, has been successful in raising \$43,467 during the past year for unemployed architects and draftsmen. Since its organization in 1932 the women's division has raised over \$175,000 for unemployed members of the architectural profession.

Mrs. Lucy Keen Johnson of Irvington-on-Hudson, N. Y., 59-year-old widow of Fletcher M. Johnson, Gainesville, Ga., has been chosen as the "typical American mother of 1935" by the executive council of the Golden Rule Mothers' Day committee, sponsored by the Golden Rule foundation. She has four sons and a daughter and thirteen grandchildren.

According to Selma Ekrom, Turkish writer and lecturer and daughter of a former governor of Jerusalem, while the emancipation of Turkish women had brought a great future to them, that future was full of worries. "Now that woman is outside the protecting walls of the harem," she said, "she has new problems—earning a living, the chance of failure and starvation, the breaking up of family life, and the previously unheard of problem of 'old maids.'"

In Russia women are particularly active in national defense preparations. 2,380,000 belonging to the National Air and Chemical Defense society. There are 100,000 crack marksmen among the women and 460,000 are in training. There are hundreds of women airplane pilots and thousands more have jumped from parachutes and learned to pilot gliders.

A bill has been introduced in the state legislature of Pennsylvania to permit the employment of women as police in Philadelphia. They would be subject to the same restrictions as policemen.

Mrs. Cordelia Howard MacDonald, who as Cordelia Howard was the first Little Eva in the dramatization of "Uncle Tom's Cabin," recently celebrated her 87th birthday anniversary at Belmont Massachusetts.

The first certificate as an architect granted to a woman in Virginia was given to Mary Ramsay Brown of Portsmouth.

The twelfth congress of the International Alliance of Women for Suffrage and Equal Citizenship will be held in Istanbul, Turkey. The meeting

will be held at Yildiz Kiosk, formerly the Sultan's palace.

Upward of 40 women practice dentistry in Philadelphia, Pa.

Useful Household Hints

Have you ever experienced the sad disappointment of seeing your lovely fruit salad spoiled because the apples turned brown? Next time, put the peeled apples in cold salt water until you are ready to prepare your salad.

When you are making bread crumbs for your meat loaf, put the bread in a paper bag and crush it with a rolling pin. It will keep the crumbs from scattering all over the table.

A raw potato rivals baking soda in its usefulness. Wilted celery, if put in a jar of cold water with a raw sliced potato, will become fresh and crisp in an hour or two. A raw potato will also clear fat after it has been used for frying. And, strangely enough, raw potatoes mixed in with scorched vegetables will kill the burnt flavor. Soup that is too salty will not become the subject of table talk if you grate a little raw potato into it and boil for 5 minutes. Speaking of potatoes, have you ever wondered how to give your mashed spuds that extra creaminess? A tablespoon of vinegar to 10 medium-sized potatoes does the trick.

A small goldfish bowl is just the thing in which to beat the whites of eggs, mayonnaise, and cream. The shape is particularly good because it prevents spattering and the small opening just accommodates the egg beater. It is easy to clean, too.

Camphor is a handy thing to keep about the house. A piece kept with your silverware will keep it from tarnishing. A cloth moistened with spirits of camphor and rubbed lightly on white water spots on furniture will work like magic in removing them.

"What Is Good?"

"What is the real good?"

I asked in musing mood.

"Order," said the law court;

"Knowledge," said the school;

"Truth," said the wise man;

"Pleasure," said the fool;

"Love," said the maiden;

"Beauty," said the page;

"Freedom," said the dreamer;

"Home," said the sage;

"Fame," said the soldier;

"Equity," the seer—

Spake my heart full sadly,

"The answer is not here."

Then within my bosom
Softly this I heard;
"Each heart holds the secret;
Kindness is the word."

—JOHN BOYLE O'REILLEY.

Hoover Dam Material

(From *The Reclamation Era*)

Reclamation Era lists an amazing quantity of both big and little things used in building Hoover Dam, including:

32,664 Canvas Water Bags
23,144 Pairs Rubber Boots
19,384 Paint Brushes
190,500 Pounds of Rags
355,000 Gunny Sacks
13,356 Shovels (hand)
86,968 Hack-saw Blades
1,291,550 Machine Bolts
1,416 Tin Dippers
7,360 Flashlights
13,046 Hard Boiled Hats
18,111 Kegs of Nails
12,912 Water Buckets
20,232 Sheets of Emery Paper
495 Miles of Manila Rope
5,348 Sponges

On June 1, 1935, Six Companies used 4,938,118 gallons of gasoline, 522,757 gallons of lubricating oil, and 777,755 pounds of grease.

To go on with other material:

32,306 Tanks of Oxygen
2,215 Carloads of Lumber
96 Fish Poles
2,331 Gross of Wood Screws
2,300 Sacks of Sulphur
9,510,000 Square Feet of Veneer
588 Police Whistles
66,404 Files

Mrs. Ida Huhtala

(Continued from page 408)

her in 1903. Mrs. Huhtala leaves to mourn her passing six children. John, Matt, Yalmer and Eli Huhtala, of Hanna. Mrs. Andrew Spence of Winton, and Sylvester Huhtala, of Pasadena, California, two daughters-in-law, Mrs. John Huhtala and Mrs. Matt Huhtala and one grandchild, Darlene Huhtala.

Funeral services were held in the Methodist Church on Sunday, September 8, with Rev. W. P. Wood officiating, with interment in the Hanna cemetery.

SHAPE MEANS NOTHING TO HER

Butcher: "Round steak, madam?"

Bride: "The shape doesn't interest me, so long as it's tender."

» » » Our Young Women « « «

A Page of Style Fads and Fancies for Autumn

HERE is a grand idea for your autumn wardrobe! Decide on a color scheme, then buy your items separately—your skirts, your coats and your accessories—and then assemble them as you please.

You will have time to think about the matter these next few weeks and to get an idea what the styles are, and what colors you prefer, so you can be all set when the cooler weather sets in.

For the sports type of wear a plaid, pleated skirt would be a good start for your wardrobe. One in flannel side-pleated in hunter's green mixture is chic.

Pleats are very good, you know. With it is worn a hunter-green velveteen jacket fastened with Tyrolean silver buttons. A tan camel's hair jacket with an action back, would look equally well with the skirt.

A smart swagger coat in the new russet tweed would also be useful in your sportswear wardrobe, and a gored skirt to match. Accessories would be two hats, one in felt, the other stitched flannel, pouch bag and reverse calf shoe with tongue and wide strap. Pigskin gloves and a silk scarf with hemstitched edge, complete the costume.

STREET WEAR

Now for the street wear, a tailored gray jersey dress fastened high at the neck and with silver buttons is a good choice. Over it wear a hip-length skunk cape.

Skunk is smart this year. A dark green silk corduroy reefer coat with a new corduroy beret, is also good to wear with this same dress. The correct hat for the first is gray stitched felt.

A skirt to match and to be worn with a russet satin blouse would vary the costume, as would a number of dressy or tailored blouses in different color schemes.

The accessories should include brown calf oxfords with leather thongs. This is a seamless shoe with a new cut; a calf or suede bag with metal clasp matches the shoes, and the gloves would be suede slip-ons.

For day-time use in early fall, woolen dresses are very sheer and in finely patterned weaves. Challis are also to have a big demand. Colors are to be warm and glowing, with plenty of blending of different tones.

The waist-line is destined to be dropped just a trifle. Skirts for day-time or sports use are shorter,

gauging from eleven to thirteen inches off instead of the ten to twelve customary of late. In Paris, they average twelve to fourteen off, some barely covering the knees.

Military capes with suits are stressed abroad, the narrow three-quarter capes having slits for the hands.

A favorite sports jacket is of finger-tip length, flaring like the box top-coat of many years back.

Collarless coats give room for wide wool and velvet scarfs.

An effective way in which to spruce up that jaded summer wardrobe is to add attractive neck-wear, white collars and bright cravats to dresses.

Scarfs that fill in the openings of the sports type of frock are of bright colors or in vigorous contrast to the tone of the frock. Brocaded gold and silk fabrics are made into Ascot ties, or are seen peeping out above the collars of suits of which they make the blouses.

Thoughtfulness

Thoughtfulness for others and unselfishness are great beautifiers. For all perfection of skin and feature will not make up for an unlovely expression. Everyone is not born with a pleasant temper any more than with a pretty face—but everyone can try and get both. And there is some satisfaction in working on one's disposition. You may not be able to alter the shape of your nose or to make large melting eyes out of a pair of optics that are good for little except seeing. But if you cultivate an interest in those about you, if you try to make the world happier for those with whom you are brought into association, you will not fail before long to get a pleasing expression that will make the physical defects be forgotten, or to see charms because they are part of a lovely and genuine personality. Try it!

"What can you get out of your car?" asked the single man.

The married man frowned.

"Usually a dozen or so women's handkerchiefs, the baby's toys, my eldest daughter's lipstick, somebody else's tennis racket, the spectacle-case I'd been looking for for a week, and a couple of dozen letters I'd forgotten to post for the wife."

» » » Our Little Folks « « «

Iceland Pony Lives to the Ripe Age of 47

Records are often made of women and men who live to an extreme age, but now from England comes the story of an Iceland pony who recently died at the age of 47 years. He was sent over from Iceland to the North of England in his early youth and was bought for private service in Yorkshire at the age of 7. There he drew a pony cart for some twenty-one years, receiving the name Guinea Pig because of his peculiar markings.

Later he was taken from the North Riding to the lower Thames Valley, there to spend five years as a pet, staying out in the field by day in all weathers. His last migration was to the hill country near the sea in North Wales, where he lived for more than fourteen years. The only work he did there was to pull bundles of bracken from the hill for his own bedding, but even this labor soon proved too much for him. Finally, being deaf and blind and afflicted with cerebral hemorrhage, his troubles were ended by a bullet.

Feeding "Table" for Bears

Feeding time for the bears is always the most popular hour at the Western national parks, for the mauling, pawing and growling of the animals as they take their places at their big concrete "tables" makes a spectacular sight.

Recently at Yellowstone the excitement was heightened when two black bears took their place at the table along with the thirty or forty Rocky Mountain grizzlies.

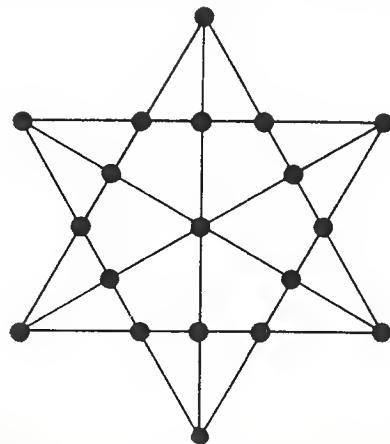
A favorite part of the spectacle is the demonstration of how the mother bears care for their cubs. Before taking their places at the platform, they shoo their two or three cubs to a convenient waiting spot near by. At any suspicious noise, there is a sudden scramble of the mothers to reach their brood; even the crying of gulls may start a stampede.

Centenary Hans Christian Anderson

Many stories from the "Fairy Tales" of Hans Christian Andersen have appeared in our magazine from time to time. Denmark is this year appropriately celebrating the one hundredth anniversary of the appearance of the book in Copenhagen with memorial events throughout the land. The book was looked upon as "a meager pamphlet, badly printed, and bound in a poor quality of paper," but eventually became a classic.

Nine Rows of Five

Supposing that you were given 19 trees and told to plant them in 9 rows and that you must have 5 trees to the row or else! Well, in case some "so and so" does give you this problem, here's the answer.



Seesaw in Garden

A seesaw for small children may be built for the garden for a small cost.

A sturdy 2x8-inch plank 10 or more feet in length can be fastened to a triangular framework of 4x4-inch posts.

The posts should be dug deep into the earth. If it is too soft to hold them well, concrete may be poured about them.

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Rock Springs

School Opening

It is estimated that 31,000,000 school children returned to their class rooms during September, nearly one-fourth of the entire population of our nation. Six millions of this number entered High Schools, twenty-five millions the elementary schools.

Registration at Rock Springs exceeds that of 1934, school officials reported, the Senior High with 588; Junior High, 369; Yellowstone, 426; Washington, 456; Lowell, 108; Roosevelt, 81, and Lincoln, 71.

PRETTY PRETTY

The nice old gentleman stopped to talk to the wee girl who was making mud pies on the sidewalk.

"My goodness," he exclaimed, "You're pretty dirty, aren't you?"

"Yes," she replied, "but I'm prettier clean."

SMILE AWHILE

Patty, aged three, was staying with her aunt while her mother shopped, and had misbehaved several times during the afternoon. Her aunt, scolding her, said, "If you aren't good, Patty, you'll not go to Heaven."

Patty replied loftily, "Oh, that doesn't make any difference; I never get to go any place anyway."

Drink More Milk

For some perverse reason known only to themselves, some children refuse to drink milk—and it is usually the child who most needs it who most dislikes it. All sorts of tricks can be resorted to in tempting the child to "drink more milk". Sometimes to drink it out of a tall glass with a straw is simply irresistible. Sometimes coloring is a marvelous lure—a drop of pale pink, or a little chocolate flavor makes milk infinitely to be desired!

When Aunt Maggie was dying she called Jean to her side.

"I want ye ta' tak' the back width oot of ma' burlyn' dress and use it for yersel," she said. "It'll mak' ye a gran' cloak."

"Oh, but Aunt," protested Jean, "I couldn't do that. Why, when ye walk oop the stairs o' Heaven wi' Uncle John a' the folks will stare at ye."

"No, they won't," retorted Aunt Maggie. "They'll be lookin' at yer Uncle John. I buried him wi'out his kilts."

News About All of Us

Rock Springs

Mrs. Thos. McMurtrie has returned from Richmond, California, where she visited relatives.

Mr. and Mrs. Chas. Ousen have returned from a motor trip to Douglas.

Mr. and Mrs. Peter Robertson have returned to their home in Pomona, California, after having visited here with Mr. Robertson's sister, Mrs. Eliga Daniels.

Ben Harvey is confined to his home with illness.

Frank Parr and family visited relatives in Salt Lake City, Utah, on Labor Day.

Mrs. John Corona is a medical patient at the Wyoming General Hospital.

Mrs. Joseph McTee, Sr., is visiting with relatives in Joliet, Illinois.

Paul Alexander has returned from Oklahoma and has gone to work in No. 4 Mine.

The Albin Fabreque family have returned from an outing at Big Sandy.

Mrs. Jesse James was called to Los Angeles, California, by the serious illness of her brother, George Rogan.

Clarence Olson has returned from a visit with friends in Salt Lake City, Utah.

Steve Liska is a medical patient at the Wyoming General Hospital.

Mrs. Ed. Parr is visiting with relatives in Salt Lake City, Utah.

Mr. and Mrs. James Draycott visited with relatives in Superior.

Mr. and Mrs. Jack Adams, Jr., of Laramie, visited here at the home of Mr. Adams' parents, Mr. and Mrs. Jack Adams, Sr.

Peter Sikich is a medical patient at the Wyoming General Hospital.

Mr. and Mrs. George Parr entertained at a dinner for Mr. and Mrs. M. J. Desmond, of Kemmerer.

Doctor and Mrs. H. J. Arbogast have returned from a few days' visit to South Pass.

Dorle Olson, of Salt Lake City, Utah, is visiting here with his parents, Mr. and Mrs. E. A. Olson.

Reliance

The Community extends its deepest sympathy to Mr. Kosta Illich and family upon the death of Mrs. Katherine Illich, which occurred at the family home here. Mrs. Illich had been a resident of Reliance for the past ten years.

Mr. and Mrs. S. M. Peppinger were Salt Lake City visitors over Labor Day. While there, they purchased a new Oldsmobile.

Mrs. Wm. Sellers is a patient at the Wyoming General Hospital, where she underwent a major operation. Her

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many friends wish her a speedy recovery.

Mr. and Mrs. Walter Johnson and son have returned from a ten-day vacation spent in California. While there they visited the Exposition at San Diego.

Mr. and Mrs. M. F. Powell and children are now residing in Rock Springs, where Mr. Powell is employed. Mr. and Mrs. Harry Faddis are now living in Reliance in the house vacated by the Powells.

Mrs. John Graham and son (Billy) have returned from a pleasant three-months' visit to Kelso, Washington.

Members of the Spence family held a reunion at the club house on Labor Day. Mr. and Mrs. James Spence, of Salt Lake City, were here for the occasion.

Friends of Mr. Tom Butler, Jr., will be glad to know that he is now able to be up and around after his recent illness.

Mr. and Mrs. H. A. Lawrence are enjoying a visit from their daughter (Miss Billie Lawrence) and Mrs. Lawrence's mother (Mrs. E. N. Bessee, of Chicago, Ill.)

Mr. and Mrs. G. D. Baxter have returned from Ogden, Utah, where they were called by the death of Mr. Baxter's nephew.

Mrs. Joseph Mitchelson has been on the sick list.

Friends and neighbors of Mrs. H. M. Kelly surprised her on her birthday anniversary, by paying her a social

call at her home in Rock Springs. After a pleasant afternoon of visiting, a delicious luncheon was served, and Mrs. Kelley was presented with a nice gift.

Elmer Meeks had the misfortune of breaking his ankle while playing baseball.

Mr. and Mrs. Henry Johnson are now residing in Rock Springs. Mr. and Mrs. Mike Kallas are living in the house vacated by the Johnsons.

Mr. and Mrs. James Stroud and family are the proud owners of a new Terraplane car.

Superior

Mrs. Lawrence Harris and family recently enjoyed a visit in Ogden, Utah, with Mrs. Harris' father, Mr. Joseph Wallace.

Harold Davis was a recent guest of the W. H. Richardson family.

Miss Ingrid Sturholm is spending her vacation in Denver. John L. Zaring, of Albia, Iowa, is a guest of Mr. and Mrs. B. F. Zaring.

Miss Vella Wylam has just returned from Washington, where she has spent most of the summer.

Mr. and Mrs. Edgar Davis are the parents of a boy, born at the hospital in Rock Springs on Friday, August 9.

Mrs. D. K. Wilson and daughter, Janet, of Rock Springs,

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visited recently at the home of Mr. and Mrs. Fred Robinson.

Dean Dettra returned recently from Fremont Lake, where he spent two weeks with Mrs. George A. Brown and sons.

Mr. and Mrs. George Girard were visitors in Superior recently. Mr. Girard has just accepted a position with the Government.

Mr. and Mrs. Frank Parton and Mr. and Mrs. John Balog have just returned from Riverton, where they attended the American Legion convention.

Jack Powell has just returned from Detroit, where he spent his vacation.

Mrs. L. Harshbarger has just returned from Warrensburg, Missouri, where she spent the last month with her mother.

John Dettra and son, Dean, visited friends in Evanston, Wyoming, over Labor Day.

Mrs. R. D. Applegate and daughters, Roberta and Peggy, left Wednesday, September 4, for Santa Ana, California, where the girls will enter their second year at college. Mrs. Applegate will visit a short time before returning.

Miss Inez Genetti returned to Cheyenne recently after spending a few days with her parents, Mr. and Mrs. Louis Genetti.

Winton

Congratulations are extended to Miss Annie Pecolar and Mr. Ben Dona, who were married August 31, 1935.

Miss Marion Petterson, Miss Katie Waltz and Miss Josephine Brack are visiting at the home of Pete Uram.

The V. F. W. auxiliary gave a very successful card party at the Community House on September 6, 1935. A large crowd attended. First prizes went to Mr. and Mrs. Paul Yedinak of Rock Springs.

Mr. and Mrs. Frank Franch are the proud parents of a baby daughter born in the Hospital at Rock Springs, September 9, 1935.

Sympathy of the community is extended to Mr. and Mrs. Andrew Spence in the death of Mrs. Spence's mother, Mrs. Ida Huhtala, which occurred at Hanna, Wyoming, September 6, 1935.

The Mitchell family was moved from Winton to Laramie. Mr. and Mrs. John Krppan have moved into the house vacated by the Mitchells.

Mr. and Mrs. William Lowe are the proud parents of a baby daughter born at their home here, September 4, 1935.

Mrs. LeRoy Jones and son have returned from California where they spent a month visiting with relatives.

Mrs. Andy Royce entertained at a shower in honor of Mrs. Ben Dona. Cards were played and a lovely luncheon was served. Mrs. Dona received many beautiful gifts.

Mr. and Mrs. Clem McClean and son have moved into the house vacated by the Hapgood family.

Mr. and Mrs. Ed Morgan and Mr. and Mrs. Wm. Ebbingher, of Hanna, Wyoming, visited with friends in Winton over the Labor Day holidays.

Mr. and Mrs. A. L. Hansen and Mr. and Mrs. Joe Bortero attended the funeral of Mrs. Huhtala at Hanna, Wyoming, on September 8, 1935.

Hanna

Mrs. E. Schroeder and sons of Mandan, N. D., visited here during August with her mother, Mrs. Joe Jackson.

Miss Isabel Sutherland, of Nebraska, visited here with her sister, Mrs. Amoss March for a few days.

Mrs. R. M. Leake entertained at a lovely reception tea at the Community Hall complimenting Mrs. Glen Orton recently.

Mr. and Mrs. John Carr and two sons of Denver stopped off a few days to visit relatives and friends enroute from Kenilworth, Utah.

The Hanna Methodist Church and the Elk Mountain Church held joint services at Elk Mountain on August 11, followed by a picnic lunch.

Miss Bernice Weibe of Aberdeen, Idaho, was the guest

of Miss Bessie Clegg for a week during August.

Mrs. Jas. Clegg returned from California, where she, her sister and parents motored for a short visit.

Mr. and Mrs. Robert Crombie, and son, and Mr. and Mrs. Hold, of Denver, were recent guests of Mr. and Mrs. Ed. Attryde.

A Mother and Daughter Lawn Festival was held on the Buehler lawn on August 20. It was sponsored by Rev. W. P. Wood and men of the Methodist Church as hosts. About fifty mothers and daughters were present and all enjoyed the program and refreshments. The guest speaker was Miss Dawson of the University of Wyoming.

Mr. and Mrs. Paul Lippincott and daughter, Arlea, and son, Leo, of Colorado, visited with their son-in-law and daughter, Mr. and Mrs. Jas. Attryde, during August.

Mrs. Helen Gabbott was the guest of Mrs. Crombie for a few days.

Miss Muriel Russel left for Denver to be present at the Graduation exercises of the nurses of the Presbyterian Hospital on August 12th, when her sister, Dorothy, will graduate, with a class of fifteen.

A reception for the Hanna school teachers was given in the Community Hall on September 6th, sponsored by the Pythian Sisters. The program consisted of musical numbers by Mark Jackson's orchestra, introduction of teachers by Mr. F. P. McCall, Superintendent of Schools, introduction of business people by Mr. C. D. Williamson. Mrs. Thomas Hudson was mistress of ceremonies and the hostesses were Mrs. Clyde Barton, Mrs. F. E. Ford, Mrs. Henry Jones and Miss Anna Klaseen.

Mr. and Mrs. Jack Crombie and daughter, Mrs. Wm. Whitehead and daughter, Lois, Mrs. Mary Crombie, Mr. and Mrs. Ed. Attryde, and Bert Crombie motored over Snowy Range a recent week-end and visited at the Wickenden home in Laramie.

Mrs. Aubrey Evans of Colorado visited her parents, Mr. and Mrs. Jas. Fearn, on Labor Day.

The members of the "500" Bridge Club and the Pythian Sisters entertained at farewell parties complimenting Mrs. H. M. Challender, who is moving to Cheyenne to reside, where Mr. Challender has accepted a position as Supervisor of Adult Education.

There has been an increase of the male population in Hanna during the months of August and September. Mr. and Mrs. Peter Owens are the proud parents of a son, born in August, Mr. and Mrs. Jack While are receiving congratulations on the arrival of a son born September 2, and Mr. and Mrs. Bruce Bailey are being congratulated on the arrival of a son born September 3.

Mr. and Mrs. Jas. Attryde visited Mrs. Attryde's parents in Boulder for a few days.

Mr. and Mrs. Wm. Shearer, of Dewitt, Arkansas, visited here with relatives and friends. They were the house guests of Mr. and Mrs. Wm. Briggs. Mrs. Shearer is the sister of Mrs. Briggs and will be remembered as Alice Warburton.

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C. H. (Hank) Williamson, wife and two children recently returned from a vacation spent in California.

They encountered several rain storms at Long Beach, on the desert, etc. They were fortunate in witnessing Ab. Jenkins' auto speed test on the "salt flats" and only regretted they couldn't tarry a few days additional to see Sir Malcolm Campbell with his "Blue Bird" making his 300 miles per hour.

The interesting article appended was clipped from the "Wyoming Labor Journal," and many of Jim's acquaintances here will get a thrill from the story.

TEN PER CENT CURE FOR MINE MULES

Jim Chee, Chinese mule-doctor, for many years at the Union Pacific Coal Company, Rock Springs stables, knew little about the animals and feared them. But he managed to hold his job more than 40 years.

Often Dr. L. D. Shafer, veteran dentist of Rock Springs, was called into consultation to diagnose equine ailments. Dr. Shafer was an expert horseman.

One day he studied an ailing mule for an hour or

more. The mule was sick, but it could not be told what was wrong with him. But Dr. Shafer found out, anyway. He poured out a quart of medicine and soliloquized: "I'll give him a 10 per cent solution." Jim Chee, standing beside Dr. Shafer, heard the remark and eagerly adopted the "formulae." Jim couldn't remember the word, "solution," but the "10 per cent" clung to his memory. For 20 years thereafter, when Jim was called to doctor a sick mule, he prescribed what he thought was best, then remarked: "Him damned sick. I give him 10 per cent. Him cured."

All his medicines were "10 per cent," whatever they happened to be.

Word reaches your columnist that China this year has its banner crop. Asking a local business man if he ever heard from any of the Old Chinese sent back by the Company to spend their declining days in the homeland, his reply was, "Yes, old Jim has a small ranch adjoining that of my grandfather and he may be seen out with his hoe in the rice at six o'clock each morning. My father has been over there nearly two years and he often meets some of the "Old Timers" who labored in this coal field so many years."

GAME!

A man wandered into a tennis tournament the other day and sat down on the bench.

"Whose game?" he asked.

A shy young thing sitting next to him looked up hopefully.

"I am," she replied.

Fisherman—I tell you it was that long. I never saw such a fish!

Friend—I believe you.

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